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Analysis of Ticonderoga Class Cruiser Operating Targets for Other Consumables, Repair Parts, and Administrative Expenditures

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June 2008

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13. ABSTRACT ***(maximum 200 words)***

The purpose of this project is to analyze Ticonderoga Class Cruiser Operating Targets (OPTAR) for the Atlantic Fleet (LANTFLT) and the Pacific Fleet (PACFLT). The scope of the analysis focused on the Ticonderoga Class Cruisers – the surface combatants with the least amount of configuration differences among the class.

This project was conducted with the sponsorship and assistance of Commander Naval Surface Forces (CNSF). The goal of this project is to provide CNSF with underlying causes which explain lower expenditures for LANTFLT than PACFLT in the sub accounts of Other Consumable (SO), Repair (SR), and Administrative (SX). Due to levels of data available and the proportion of total expenditures that each sub-account represented, the emphasis of the analysis was concentrated on the Other Consumable and the Repair Parts Sub-accounts.

The project developed a methodology to analyze expenditures within the cruiser class by three different levels; the sub-account level, the expense element level, and the system level. The cruisers were classified into groups based on their fleet, homeport, area classification (OCONUS or CONUS), and baseline configuration, at the sub-account and expense element level to see if there were relationships within the different groupings.

14. SUBJECT TERMS Ticonderoga Class Cruiser, baseline configuration, expenditures, Expense Element (EE), Operating Target (OPTAR), Other Consumable (SO), Repair Parts (SR), and Administrative (SX), Sub-account, Equipment Identification Code (EIC), and National Item Identification Number (NIIN)			**15. NUMBER OF PAGES** 145 / **16. PRICE CODE**
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ANALYSIS OF TICONDEROGA CLASS CRUISER OPERATING TARGETS FOR OTHER CONSUMABLES, REPAIR PARTS, AND ADMINISTRATIVE EXPENDITURES

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LIST OF ACRONYMS

AG	Activity Group
ADAL	Authorized Dental Allowance List
AMMAL	Authorized Medical Material Allowance List
APL	Allowance Parts Listing
APPN	Appropriation
AVDLR	Aviation Depot Level Repairables
BAG	Budget Activity Group
CONUS	Continental United States
DFAS	Defense Finance and Accounting Service
DoD	Department of Defense
EIC	Equipment Identification Code
FC	Fund Code
FMB	Navy Office of Budget
FY	Fiscal Year
FYDP	Future Years Defense Plan
GWOT	Global War on Terrorism
ISL	Integrated Stock Listing
LANTFLT	Atlantic Fleet
NAVSEA	Naval Sea Systems Command
NIIN	National Item Identification Number
NSWC	Naval Surface Warfare Center

OCONUS	Outside the Continental United States
O&M,N	Operations and Maintenance, Navy
O&M,NR	Operations and Maintenance, Navy Reserve
OPNAV	Office of the Chief of Naval Operations
OPTAR	Operating Target
OPTEMPO	Operation Tempo
OSD	Office of the Secretary of Defense
PACFLT	Pacific Fleet
SNSL	Stock Number Sequence Listing
SO	Other Consumable Cost Element
SR	Repair Parts Cost Element
STARS-FL	Standard Accounting and Reporting System Field Level
SWE	Surface Warfare Enterprise
SX	TAD Cost Element
TAD	Temporary Additional Duty
TYCOM	Type Commander

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I. INTRODUCTION

A. BACKGROUND

> The purpose of the Surface Warfare Enterprise is not to do more with less, or to push war fighters to cheapen readiness in any way – just the opposite. The effort is dedicated to making sure we take the limited funds the taxpayers give us and get the very most war fighting capability into your hands so you can do your job and win the fight at sea.
>
> — Vice Admiral Terry T. Etnyre, U.S. Navy, Commander Naval Surface Forces[1]

In the 2007 Surface Warfare Enterprise (SWE) Strategic Plan Commander's Intent, Admiral Etnyre commented on how U.S. Naval Surface Forces fundamentally shifted from the Navy 600 ship emphasis in the Cold War Era towards a 313 ship Navy and more efficient resource management in the 21st Century. Consequently, in October 2005 the U.S. Navy consolidated its two long-standing type commands, Surface Forces Pacific and Surface Forces Atlantic, into Commander Naval Surface Forces. The purpose of the reorganization was to further integrate both forces in preparation for the Surface Warfare Enterprise.

1. The Force Composition

The current U.S. Navy's inventory of surface combatants was designed explicitly for open-ocean, high intensity naval warfare against the Soviet Union.[2] The risk of conflict with the Russian surface forces greatly reduced during the past two decades. As a result, the combatant force has expanded from its traditional role of escorting high value units such as aircraft carriers and large amphibious ships, to roles in strike warfare and ballistic missile defense.

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1 T. T. Etnyre, "Commander, Naval Surface Forces Strategic Plan 2006-2011," (2007) http://www.swe.surfor.navy.mil/Site%20Pages/StrategicPlan.aspx (accessed February 28, 2008).

2 United States Congressional Budget Office, *Transforming the Navy's Surface Combatant Force* (Washington, D.C.: Congress of the U.S., Congressional Budget Office: U.S. G.P.O. [distributor, 2003]).

Today, surface combatants comprise more than a third of the U.S. Naval Fleet.[3] More than 23 percent of the surface combatant force consists of Ticonderoga Class Cruisers. Table 1 illustrates a basic comparison of the surface combatant forces between PACFLT and LANTFLT. In particular, Table 1 shows that PACFLT and LANTFLT possessed an equal number of cruisers for the time period observed (FY 2006- FY 2007) in this study.

Number of Surface Combatant Ships		
Class	Pacific Fleet	Atlantic Fleet
DDG	27	25
CG	**11**	**11**
FFG	8	13
LCS	1	0

Table 1. Comparison of U.S. Naval Combatant Forces.[4]

Table 2 identifies each cruiser's homeport in their respective fleet. PACFLT, cruisers are located in the following homeports: San Diego, CA, Pearl Harbor, HI; Yokosuka, Japan. LANTFLT cruisers are located in the following homeports: Norfolk, VA; Mayport, FL.

3 Jane's Information Group, "Jane's Fighting Ships," http://www.janes.com/Search/documentView.do?docId=/content1/janesdata/yb/jfs/jfs_3530.htm@current&pageSelected=allJanes&keyword=tank&backPath=http://search.janes.com/Search&Prod_Name=JFS&keyword= (accessed April 15, 2008).

4 Brian Drapp, e-mail message to author, November 27, 2007.

PACFLT CRUISERS		LANTFLT CRUISERS	
SHIP NAME & HULL NUMBER	**HOMEPORT**	**SHIP NAME & HULL NUMBER**	**HOMEPORT**
USS BUNKER HILL (CG 52)	SAN DIEGO	USS LEYTE GULF (CG 55)	NORFOLK
USS MOBILE BAY (CG 53)	SAN DIEGO	USS SAN JACINTO (CG 56)	NORFOLK
USS ANTIETAM (CG 54)	SAN DIEGO	USS PHILIPPINE SEA (CG 58)	MAYPORT
USS LAKE CHAMPLAIN (CG 57)	SAN DIEGO	USS NORMANDY (CG 60)	NORFOLK
USS PRINCETON (CG 59)	SAN DIEGO	USS MONTEREY (CG 61)	NORFOLK
USS CHANCELLORSVILLE (CG 62)[5]	SAN DIEGO	USS GETTYSBURG (CG 64)	MAYPORT
USS COWPENS (CG 63)	YOKOSUKA	USS HUE CITY (CG 66)	MAYPORT
USS CHOSIN (CG 65)	PEARL HARBOR	USS ANZIO (CG 68)	NORFOLK
USS SHILOH (CG 67) [6]	YOKOSUKA	USS VICKSBURG (CG 69)	MAYPORT
USS LAKE ERIE (CG 70)	PEARL HARBOR	USS VELLA GULF (CG 72)	NORFOLK
USS PORT ROYAL (CG 73)	PEARL HARBOR	USS CAPE ST. GEORGE (CG 71)[7]	NORFOLK

Table 2. U.S. Cruisers by Homeport[8]

Ticonderoga Class Cruisers have served in the Navy for over 25 years. Over the last decade, the Navy began a conversion program in an attempt to extend the cruisers' service life to 35 years. At the same time, the Navy ensured that 22 of 27 AEGIS Cruisers (CG 52 - CG 73) would be relevant in their new combat environment.[9]

As a result, three different baselines exist within the current commissioned Ticonderoga Class Cruisers. USS BUNKER HILL (CG 52) became the first Aegis ship outfitted with the vertical launch system (VLS).[10] Then, USS PRINCETON (CG 59) was

5 Conducted a homeport shift from Yokosuka to San Diego in August 2006.

6 Conducted a homeport shift from San Diego to Yokosuka in August 2006.

7 Conducted a homeport shift from Norfolk to San Diego in July 2007.

8 "United States Navy Organization and Missions," *Sea Power* 50, no. 1 (January 2007): 1, http://proquest.umi.com/pqdweb?did=1234487851&Fmt=7&clientId=65345&RQT=309&VName=PQD (accessed February 28, 2008).

9 Edward H. Lundquist, "Commentary - Navy to Modernize Aging Aegis Cruisers," *National Defense* 88, no. 597 (2003): 56.

10 Ibid.

the first ship to be equipped with the AN/SPY-1B Radar.[11] USS CHOSIN (CG 68) established a greater processing capability for Aegis Cruisers through the integration of the UYK 43/44 and the superset computer programs.[12]

There is an uneven distribution of ships within the baselines (7 ships in Baseline 2, 6 ships in Baseline 3, and 9 ships in Baseline 4) between PACFLT and LANTFLT. Table 3 provides a snapshot of the enhanced capabilities that were installed in each baseline, and the distribution of each baseline is reflected in the fleets.

Aegis Cruiser Baselines			
Baseline	**Hulls Affected**	**Distribution (LANT /PAC)**	**Modifications**
2	(CG 52-58)	(3/4)	o Introduction of VLS o Introduction of TOMAHAWK Weapons System o Anti-Submarine Warfare Upgrades
3	(CG 59-64)	(3/3)	o Introduction of the AN/SPY 1-B o Introduction of the AN/UYQ -21
4	(CG 65-73)	(5/4)	o AN/UYK-43/44 Integration

Table 3. Progression of Aegis Cruiser Baselines. [13]

2. The Readiness Environment

In the past, the U.S. Navy achieved readiness through a two-year cycle.[14] Traditionally, surface units only deployed at peak readiness for approximately six months at a time.[15] The non-deployed units were either involved in a maintenance cycle, a training cycle, or their unit status was unclear due to a lack of metrics in place to assess the unit's real time readiness.[16]

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11 Lundquist, "Commentary - Navy to Modernize."

12 Ibid.

13 Ibid.

14 Ronald J. Yardley et al., *Impacts of the Fleet Response Plan on Surface Combatant Maintenance* (RAND Corporation, Santa Monica, CA, 2006), http://www.rand.org/pubs/technical_reports/2006/RAND_TR358.pdf (accessed July 12, 2006).

15 United States Government Accountability Office (GAO), *Military Readiness: Navy's Fleet Response Plan would Benefit from a Comprehensive Management Approach and Rigorous Testing* (GAO-06-84, November 2005, Report to Congressional Committees).

16 Ibid.

In 2003, the U.S. Navy implemented the Fleet Response Plan (FRP) which required continuous readiness. In the midst of the Global War on Terrorism (GWOT), the FRP transitioned the Navy's ship readiness objectives and maintenance needs from those of the Cold War Era. According to the FRP, the overall objective was an unprecedented "readiness level that would allow six Carrier Strike Groups (CSG) to deploy within 30 days and two more within 90 days."[17] In considering readiness requirements, it is important to remember that in FY 2007, the $8.5 billion for Operations and Maintenance funding provided for 11 aircraft carriers, 106 surface combatants, 34 amphibious ships, 52 nuclear attack submarines, 18 missile submarines, 32 combat logistics ships, 14 mine warfare ships, and 18 support ships.[18]

3. The Budgeting Process

To understand the force composition and readiness, it is essential to have a sound grasp of how the U.S. Navy receives resources to operate and sustain surface forces. This section describes the overall defense budget process. DoD employs a program known as the Future Years Defense Plan (FYDP) to establish planned force structure and identify the resources necessary to support that structure over a moving 11-year period. To facilitate management of information, Budget Activity Programs (BAP) are utilized to capture financial information by categories. Examples of Budget Activity Programs are Operating Forces, Mobilization, Training, and Recruiting.

Four Activity Groups (AG) further partition the BAP structure. They are:

AG	Title
1A	Air Operations
1B	Ship Operations
1C	Combat Operations/Support
1D	Weapons Support

17 Yardley et al., *Impacts of the Fleet Response*.

18 United States Navy, *Department of the Navy Fiscal Year 2007 Budget Estimates Submission Operation and Maintenance,* 1-4.

Then AGs are subdivided into Sub-Activity Groups (SAG). For instance, the AG 1B Ship Operations subdivides into the following SAGs:

SAG	Title
1B1B	Mission and Other Ship Operations
1B2B	Ship Operational Support and Training
1B4B	Ship Depot Maintenance
1B5B	Ship Depot Operations Support

Budget Authority (BA) is determined through the congressional appropriations process and executive branch approval. Operations and Maintenance, Navy (O&M, N) BA is legislated for each twelve-month fiscal year.

Once the Office of Management and Budget (OMB) has received the apportionment, the Undersecretary of Defense (Comptroller) allocates budget authority to the service secretaries.[19] In the case of the Navy, that is the Assistant Secretary of the Navy for Financial Management and Comptroller (ASN(FM&C)).[20] Then the ASN(FM&C) allocates this O&M, N budget authority to the Responsible Officer (RO) which is the Chief of Naval Operations (CNO).[21] The CNO then allots spending authority to the Major Commands such as the Fleet Commanders (i.e., COMLANTFLT for LANTFLT and COMPACFLT for PACFLT) in the form of an operating budget.[22] Then the Fleet Commanders either allots the spending authority to the Type Commanders (TYCOM), (i.e., COMNAVSURFOR, COMNAVAIRFOR, COMNAVSUBFOR), or hold the responsibility at their level and provide allowances to

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19 Lisa Potvin, "Chapter 2: From Congress to You," in *Practical Financial Management: A Handbook for the Defense Department Financial Manager* 7th ed., ed. Lisa Potvin (Monterey, CA: United States Naval Postgraduate School Graduate School of Business and Public Policy, November 2007), 9-11, http://www.nps.edu/academics/gsbpp/pcc/.html/academics.html (accessed May 10, 2008).

20 Ibid.

21 Ibid.

22 Ibid.

the end user known as operating targets (OPTAR).[23] Although spending authority follows a common process between the two fleets, the actual funding for the expenditures may differ between the two fleets.[24]

The primary purposes of the O&M, N and Operations and Maintenance, Navy Reserve (O&M, NR) appropriations categories are to provide trained crews, ready ships and continuously deployable, combat ready vessels to protect our national security objectives. These appropriations contain the Mission and Other Ship Operations (1B1B) sub-activity group.[25]

This sub-activity group makes available resources for all facets of ship operations necessary to continuously deploy combat ready warships and sustain forces in support of national objectives. The programs supported consist of operating tempo (OPTEMPO), fleet and unit training, operational support, pier side support and port services, organizational maintenance, and associated administrative support.[26]

Obligations of Operations and Maintenance funds can only be incurred during the 12 month fiscal year for which the Congress appropriated the budget authority. Expenditures, payment or liquidation of obligations, can be made during the current year and the following five years. Additionally, during this six-year period, previous obligations may be adjusted or canceled.

Shipboard expenditures are accounted for in the Relational-Supply (R-Supply) management system and ultimately transmitted electronically to TYCOMs monthly in the form of a Transaction Listing (TL) and Budget OPTAR Report. When the TLs are transmitted, they are sent to the Standard Accounting and Reporting System-Field Level (STARS-FL). The TYCOMs transmit the information to the Defense Finance and

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23 "Chapter 2: From Congress to You."

24 Edward Neal Hering, e-mail message to author, May 13, 2008.

25 Ibid.

26 William K. Gantt et al., “Analysis of the Ship Ops Model's Accuracy in Predicting U.S. Naval Ship Operating Costs,” (Master’s thesis, Naval Postgraduate School, Monterey, CA, 2003), 1-305.

Accounting Service (DFAS). DFAS maintains official accounting records for each activity. DFAS uses these reports to reconcile and balance the outstanding accounts of the TYCOMs.

4. The Funding Process

"Little is possible without the judicious allocation of financial resources, and in an environment of fiscal restraint that characterizes equally times of peace and times of war, [financial management] is critical, if not urgent."[27] In this era of the GWOT, resources are highly constrained. Consequently, identification of cost drivers for operating ships to facilitate a more efficient use of available resources, increases in importance.

Costs consist of distillate fuel (SF) to support OPTEMPO goals of 51 underway days per quarter for deployed fleet forces and 24 underway days per quarter for non-deployed forces, organizational level repairs, supplies and equipage (SR), utilities and other costs (SO), Temporary Additional Duty (TAD) for shipboard and afloat staff personnel (SX), nuclear propulsion fuel consumption and processing costs, and charter of leaseback units through the Military Sealift Command. The Office of the Chief of Naval Operations (OPNAV) N80 programming staff determines the resource requirements for the 1B1B sub-activity.

Recently, as seen in Figure 1, the general trend in funding requirements to support the FRP Cycle has produced a decrease in SR funding at the depot maintenance level and increase in the SO and SX funding. Basic capabilities will require an increase in funding for all three areas. Also, surge capabilities will require an increase in SR and SO funding.

[27] Richard Greco Jr., remarks at the Naval Postgraduate School, Monterey, CA, February 24 2005.

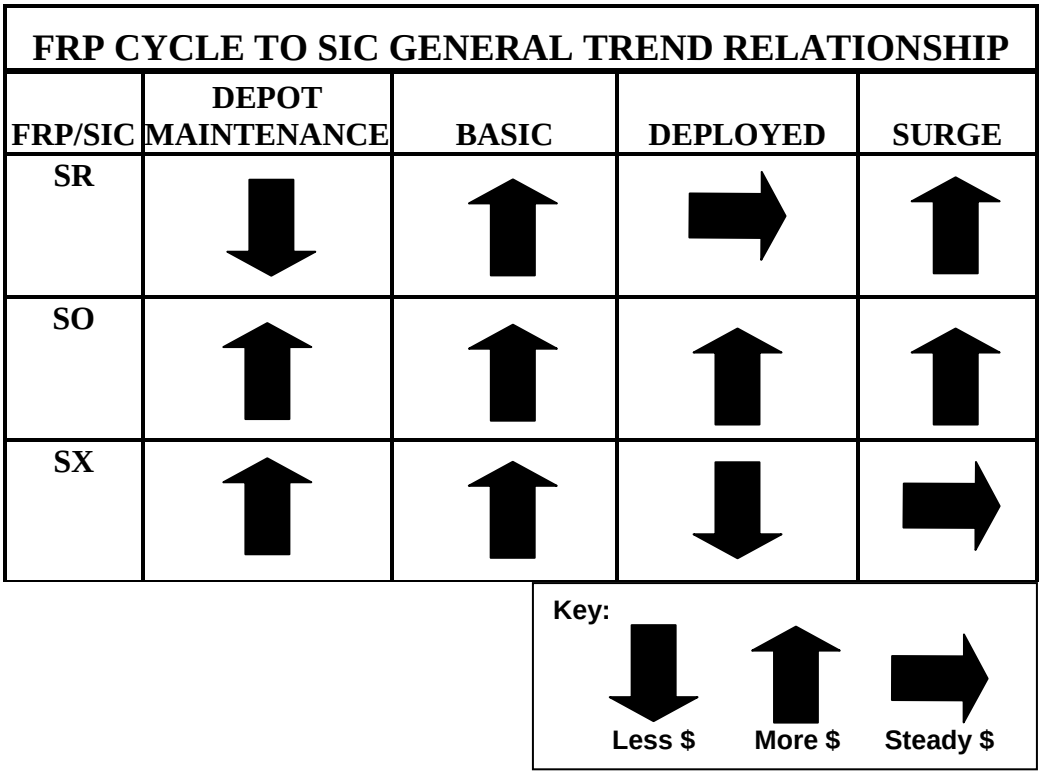

Figure 1. FRP Cycle General Trend.[28]

B. RESEARCH DISCUSSION

As shown in Table 4, in FY 2008 CNSF reported that Ticonderoga Class Cruisers (CG 47) assigned in LANTFLT operate at a lower cost than those assigned in PACFLT. However, according to CNSF, the governing instructions, readiness metrics, mission requirements, and training requirements are congruent between the fleets. Explanations for the differences in operating costs have not been documented. Documenting the reasons for the differences in costs may provide CNSF the opportunity to reduce operating costs whereby creating the opportunity to reallocate saved financial resources to alleviate funding shortfalls in other areas.

28 Brian Drapp, e-mail message to author, November 27, 2007.

FY 2008 1B1B SHIPS OPERATIONS FUNDING (Amount in thousands of dollars)			
SUB-ACCOUNT	**LANTFLT Funding**	**PACFLT Funding**	**Delta**
SO	$57,328	$74,788	-17,460
SR	$110,791	$111,968	-1,177
SX	$10,427	$19,125	-8,698

Key:
SO: Ship Consumables
SR: Ship Repair
SX: Ship TADTAR/ Command & Staff Funding

Table 4. FY 2008 1B1B Ships Operations Funding.[29]

C. OBJECTIVES

The objective of this project was to evaluate the SO, SR, and SX expenditures of the 1B1B sub-activity group for LANTFLT and PACFLT CG 47 class ships, to develop possible explanations for the higher operating costs for PACFLT. Furthermore, the following questions for each sub-activity groups were explored:

1. Sub-accounts

- Determine if higher expenditures are related to the cruiser's assigned fleet.
- Determine if higher expenditures are related to the cruiser's age.
- Determine if higher expenditures are related to the cruiser's baseline.
- Determine if cruisers that won the Battle Efficiency (Battle E) consumed more or less funds across SO, SR, and SX accounts than other cruisers in their respective fleet.

2. Expense Elements

Determine which groups had the highest mean expenditures in each expense element:

- Ships in cruiser Baseline 2, 3, or 4
- Ships assigned to PACFLT or LANTFLT

[29] Brian Drapp, e-mail message to author, November 27, 2007.

- Ships homeported Outside of the Continental United States (OCONUS) or in the Continental United States (CONUS) for PACFLT
- Ships homeported in Mayport or Norfolk
- Ballistic Missile Defense (BMD) capable or Non-BMD capable

3. Systems

- Identify the 10 most costly cruiser systems for FY 2006 and FY 2007.
- Identify which National Item Identification Numbers (NIIN) caused the greatest impact for the dollar difference between PACFLT and LANTFLT and what percentage of system expenditures they encompassed.
- Identify NIINs that met two of the three following criteria:
    - Unit price of at least $5,000
    - Total quantity demanded of 50 or more units
    - Accounted for at least one percent of total system expenditures for both fleets

The unit price of at least $5,000 criteria was based on the requirement for Commanding Officers approval of all expenditures of $5,000 or more by COMNAVSURFOR Instruction 4400.1 and p. 7005 b. (6). The total quantity demanded of 50 or more units criteria was based on our experience as Supply Officers. In the past, when demand has exceeded 50 units it has been considered a high usage item and required more scrutiny. The NIIN accounted for at least one percent of total system expenditures for both fleets criteria was based on the objective to provide CNSF with cost drivers that accounted for a majority of expenditures for both fleets.

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II. DATA COLLECTION AND METHODOLOGY

A. LITERATURE REVIEW

Previous studies analyzing cost drivers for sub-accounts SR, SO, and SX for surface combatants could not be found. However, there have been studies that analyzed the relationships between OPTEMPO and OPTAR expenditures. Also, previous studies attempted to use historical data to create models to accurately forecast expenditures of operating ships.

In 2007, Joseph C. Rysavy conducted a statistical analysis of Los Angeles Class Submarines OPTAR expenditures between PACFLT homeports.[30] The study concluded that there were statistically significant differences between PACFLT homeports within the SO and SR expenditures, and there was a relationship between OPTAR expenditures and ship schedules. However, the most significant predictor of OPTAR expenditures was not the unit's homeport, but its schedule.

In 2003, William K. Gantt conducted an analysis of the ship's operations model's accuracy in predicting U.S. Navy ship operating costs. The study identified relationships between SR and SO costs to a ship's tasking schedule.[31] Gantt concluded that the regression based predictions improved the predictive accuracy of a ship's SR funding. However, there were concerns about the usefulness of regression based predictions for SO funding.

In 1994, Blaine S. Pennypacker conducted an analysis of two surface ship readiness models, specifically the Surface Ship Resources to Material Readiness Model and the Surface Ship Inventory to Material Readiness Model.[32] The study concluded that

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30 Joseph C. Rysavy, "A Statistical Analysis of Los Angeles Class OPTAR Expenditures between Pacific Fleet Homeports," (Master's thesis, Naval Postgraduate School, Monterey, CA, 2007).

31 Gantt et al., "Analysis of the Ship Ops," 285.

32 Blaine S. Pennypacker, "A Comparison and Validation of Two Surface Ship Readiness Models," (Master's thesis, Naval Postgraduate School, Monterey, CA, 1994), 103.

both models did a poor job of explaining the variability of readiness at the unit level. Additionally, when the two models were compared, they predicted distinctly different levels of readiness.

In 1988, Kevin L. Kuker, Shu S. Liao, and Craig D. Hanson conducted a feasibility study of relating surface ship OPTAR obligation patterns to their operating schedules. They concluded that when a ship's operational schedule changes, so does its maintenance requirements. By using regression analysis, they discovered that cruisers had better forecast estimates than frigates. They suggested that the experience of a ship's supply officer plays an important role in the proper execution of its OPTAR.[33]

Also, in 1988, James A. Catalano and Shu S. Liao attempted to create an OPTAR forecasting model. They discovered that Integrated Logistics Overhaul OPTAR grants had a tremendous impact on his model. Additionally, they concluded that the number of weapons systems aboard a ship might have an impact on that ship's OPTAR spending.[34]

In 1987, Thomas D. Williams conducted an analysis of selected surface ship OPTAR obligation patterns and their dependency on operating schedules. His study failed to find a statistically significant relationship between expenditure patterns and operating schedules. Furthermore, he concluded that no relationship existed between a ship's homeport location and the amount of its annual OPTAR.[35]

Previous studies have suggested that a ship's operational employment directly impacts its OPTAR expenditures. These studies found that a relationship exists between a ship's SR and SO expenditures and its operating level. We will attempt to identify specific cost drivers that affect a cruiser's OPTAR expenditures.

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33 Kevin L. Kuker, Shu S. Liao and Craig D. Hanson, "A Feasibility Study of Relating Surface Ship OPTAR Obligation Patterns to their Operating Schedules," (Master's thesis, Naval Postgraduate School, Monterey, CA, 1988), 207.

34 James Anthony Catalano and Shu S. Liao, "Toward an OPTAR Allocation Model for Surface Ships of the Pacific Fleet" (Master's thesis, Naval Postgraduate School, 1988), 55.

35 Thomas D. Williams, "An Analysis of Selected Surface Ship OPTAR Obligation Patterns and their Dependency on Operating Schedules and Other Factors," (Master's thesis, Naval Postgraduate School, Monterey, CA, 1987), 166.

B. SELECTION OF SHIP CLASS

For this comparison, the Ticonderoga Class (CG 47) Cruiser was chosen due to the class's homogenous mixture in contrast to the other classes of ships in the U.S. Navy's Surface Forces. This class contains twenty-two active ships. This sample size is adequate to analyze the data to provide relevant results. There are also twenty-two Arleigh Burke Class Destroyers, which is seventeen percent of the population of surface ships. However, the Arleigh Burke Class Destroyers and the Oliver Hazard Perry Class Frigates have greater variance in design and modernization packages that could skew the analysis. The amphibious class ships have less than ten ships in each of its classes and would provide relatively limited data.

The first consideration in conducting this analysis was to determine if any cruisers had shifted homeport during FY 2006 and FY 2007. In August 2006, USS CHANCELLORSVILLE and USS SHILOH swapped homeports, sending USS CHANCELLORSVILLE to San Diego, CA and USS Shiloh to Yokosuka, Japan. Since the cruisers remained within PACFLT, the costs were not impacted. USS CAPE ST. GEORGE shifted homeport from Norfolk, VA to San Diego, CA on July 30 2007. USS CAPE ST. GEORGE spent 10 out of the 12 months assigned to LANTFLT. We assumed its expenses would not be affected by its new fleet assignment. Therefore, we categorized the expenses as LANTFLT for the entire fiscal year for this study.

C. DATA ANALYSIS SCOPE

For this analysis, the SR and SO sub-accounts were chosen for further examination because of the portion of expenditures that those two accounts represent. Of the three sub-accounts from FY 2006 to FY 2007, SO and SR accounted for 98 percent of the expenditures, SR accounted for the largest segment of the three sub accounts at 80 percent demonstrated below in Figure 2.

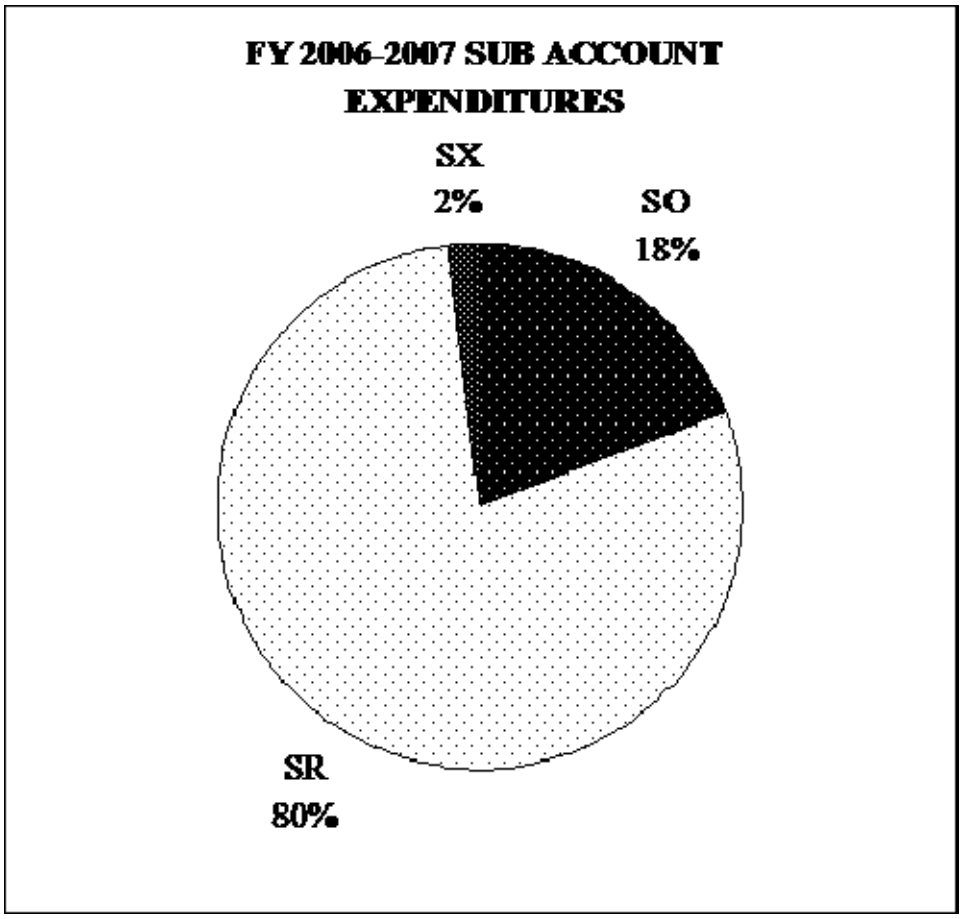

Figure 2. FY 2006-2007 Sub-Account Distribution.

The SR and SO sub-accounts consisted of the Supplies expense element (T). The Supplies expense element (T) accounted for 88 percent of the total expenditures shown in Figure 3. Due to the large amount of expenditures, we chose the expense element (T) for further analysis in our research.

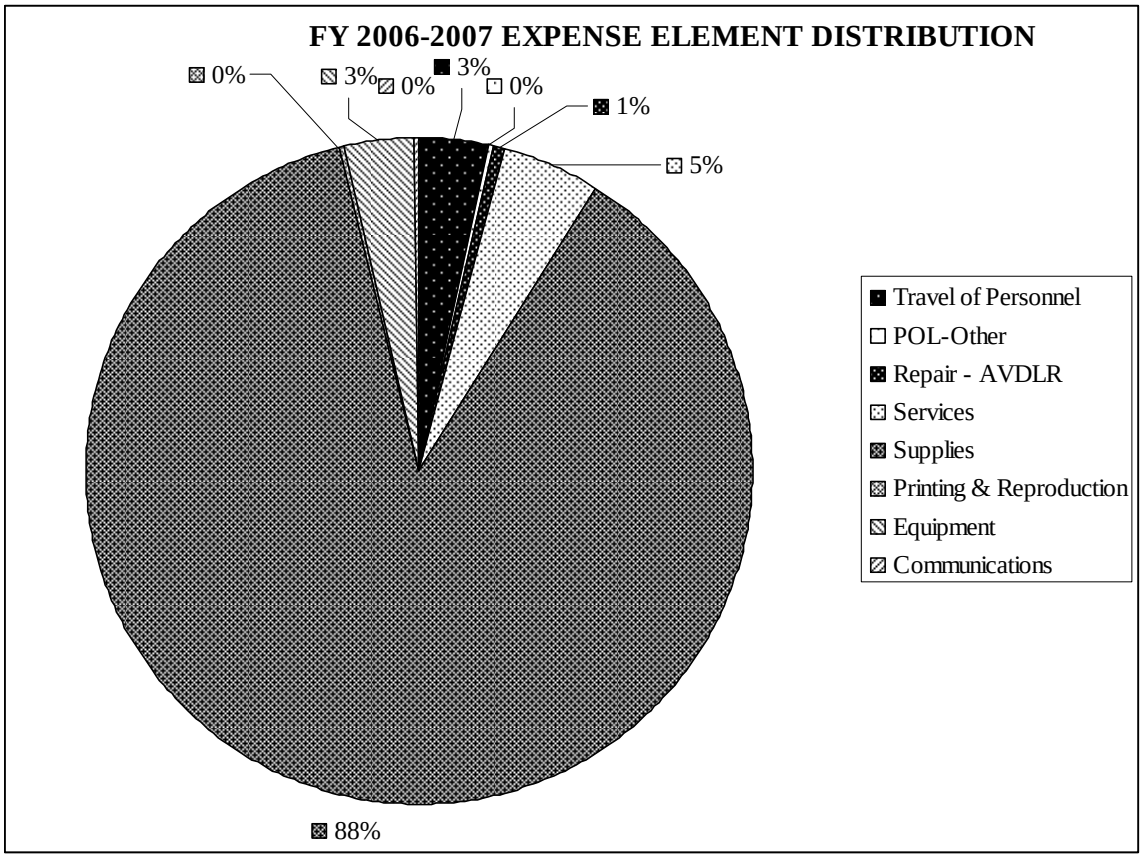

Figure 3. FY 2006-2007 Expense Element Distribution.

To limit the scope of our analysis of systems, we will focus our research on the 10 most costly cruiser systems for FY 2006 and FY 2007 regardless of which fleet had the higher expenditures for each system. For the system level analysis, we will present the 10 NIINs that account for the greatest differences in system expenditures for the more costly fleet. Additionally, this presentation will allow the reader a more concise analysis. The complete listing of NIINs with their demand and cost differences can be requested from CNSF.

D. METHODOLOGY

1. Sub-accounts

To compare the sub-accounts of SO, SR, and SX expenditures of the fleets we began by gathering the aggregate listing of all outlays for each cruiser provided by SWE. The data was extracted from STARS-FL. We segregated the data for each of the sub-account expenditures by ship and ranked them from the most expensive to least expensive for each sub-account. We then grouped the cruisers by their assigned fleet, baseline configuration, whether they won the Battle E or not, and finally, the five oldest and youngest cruisers. We calculated the mean expenditures and compared those means within each group. We used the means to determine whether PACFLT or LANTFLT, which baseline configuration, Battle E winners or non-Battle E winners, and finally, the oldest or youngest cruisers, consumed more or less funds.

2. Expense Elements

To further explain the cost drivers of cruisers in FY 2006 and FY 2007, we also investigated expense elements, which is the tier below the sub-account level. Appendix A contains the definitions of the expense elements and their purpose. Table 5 provides the expense elements that all sub-account expenditures were classified.

EXPENSE ELEMENT	ABBREVIATION	SUB-ACCOUNT
Travel of Personnel	E	SO and SX
Communications	N	SO
Purchase Services Other	Q	SO
Supplies	T	SO and SR
Petroleum-Other than Fuel	V	SO
Equipment	W	SO
Print & Reproduction	Y	SO
Aviation Depot Level Repairables	2	SR

Table 5. Pacific & Atlantic Fleet Expense Elements.[36]

[36] United States Navy, Office of the Comptroller., *Financial Management of Resources: Operating Procedures (Operating Forces)* ([Washington, D.C.]; Philadelphia, PA: Dept. of the Navy, Office of the Comptroller; Naval Publications and Forms Center [distributor], 1990).

Our first objective was to determine which cruiser classifications had the highest expenditures in each expense element. To do so, we calculated the mean expenditures for cruisers in Baseline 2, 3, and 4. Then we calculated the mean expenditures for cruisers assigned to PACFLT and cruisers assigned to LANTFLT. Then we calculated the mean expenditures for cruisers homeported Outside of the Continental United States (OCONUS) and in the Continental United States (CONUS) in PACFLT. Then we calculated the mean expenditures for Mayport cruisers and Norfolk cruisers.

a. Baseline Comparison

We grouped each of the ships by their respective baseline and calculated the total for each baseline. Due to an uneven distribution of ships within each baseline (7 cruisers in Baseline 2, 6 cruisers in Baseline 3, and 9 cruisers in Baseline 4) we normalized the data by calculating the mean expenditures for cruisers in each baseline. For example, in FY 2007 we divided $218,343 (the total Baseline 2 travel of personnel expenditure) by seven (the number of cruisers in Baseline 2). The result was the mean travel of personnel expenditure per Baseline 2 cruiser was $31,191. Additionally, we calculated the mean percentage of expense element expenditures for each baseline. For instance, in FY 2007 we divided $31,191 (the mean expenditures for Baseline 2) by $962,200 (the total travel of personnel expense of for the class). The result was that on average each Baseline 2 cruiser accounted for 3.24 percent of the cruiser travel of personnel expenditures. We performed this process for all eight expense elements for each baseline.

b. Fleet Comparison

We compared the total expense element expenditures of each fleet. We divided the aggregate expenditures of each fleet by the number of cruisers assigned in each fleet to determine the mean cruiser expenditures in each fleet. For example, in FY 2007 we divided $443,669 (the total travel of personnel expenditures for all PACFLT cruisers) by 11 (the number of cruisers in PACFLT). The result was the mean travel of personnel expenditure was $40,334. Additionally, we calculated the average percentage of expense element expenditures for each fleet. For instance, in FY 2007 we divided $40,334 (the mean travel of personnel expenditures for PACFLT) by $962,200 (the total travel of personnel expense). The result was on average each PACFLT cruiser accounted

for 4.19 percent of the cruiser travel of personnel expenditures. We performed this process for all eight expense elements for each baseline.

c. PACFLT Homeport Comparison

We then did a comparison of the cruisers homeported in CONUS to those cruisers homeported in OCONUS within PACFLT. This comparison could only be conducted in PACFLT because LANTFLT did not possess any OCONUS cruisers. PACFLT homeports that were classified as OCONUS were Yokosuka, Japan and Pearl Harbor, Hawaii. PACFLT homeport that was classified as CONUS was San Diego, CA. Due to their being an unequal distribution of cruisers within PACFLT (5 cruisers OCONUS, 6 cruisers CONUS), we normalized the data by calculating the mean expenditures for cruisers in each area classification. For example, in FY 2007 we divided $188,964 (the total travel of personnel expenditures of CONUS ships) by six (the number of CONUS cruisers). The results were the mean travel of personnel expenditures of a CONUS PACFLT cruiser was $31,494. Additionally, we calculated the average percentage of the expense element expenditures for each area classification. For instance, in FY 2007 we divided $31,494 (the mean travel of personnel expenditures for CONUS cruisers) by $443,669 (the total PACFLT travel of personnel expense). The result was that on average, each CONUS cruiser accounted for 7.1 percent of PACFLT travel of personnel expenditures. We performed this process for all eight expense elements for each area classification.

d. LANTFLT Homeport Comparison

We then did a comparison of the two LANTFLT homeports Norfolk, VA and Mayport, FL. We divided the aggregate travel of personnel expense element expenditures of each homeport by the number of cruisers assigned in each homeport to determine the mean travel of personnel expenditures per cruiser per homeport. For example, in FY 2007 we divided $147,057 (the total travel of personnel expenditures for all Mayport cruisers) by four (the number of cruisers in Mayport). The result was a mean travel of personnel expenditure of $36,764. Additionally, we calculated the average percentage of expense element travel of personnel expenditures for each homeport. For instance, in FY 2007 we divided $36,764 (the mean travel of personnel expenditures for Mayport) by $518,531 (the total LANTFLT travel of personnel expense). The result was

that on average each Mayport cruiser accounted for 7.09 percent of the cruiser travel of personnel expenditures. We performed this process for all eight expense elements for both LANTFLT homeports.

e. PACFLT Ballistic Missile Defense Capable Comparison

We then did a comparison of the cruisers modified with the ballistic missile defense capability. This comparison could only be conducted in PACFLT because LANTFLT did not possess any BMD capable cruisers. PACFLT cruisers that were classified as BMD capable were USS PORT ROYAL, USS LAKE ERIE, and USS SHILOH. Given an unequal distribution of cruisers within PACFLT (8 cruisers non-BMD capable, 3 cruisers BMD capable), we normalized the data by calculating the mean expenditures for cruisers in each capability classification. For example, in FY 2007 we divided $14,513,148 (the total supply expenditures of PACFLT BMD cruisers) by three (the number of PACFLT BMD capable cruisers). The result was the mean supplies expenditures of a BMD capable PACFLT cruiser was $4,837,716. Additionally, we calculated the average percentage of expense element expenditures for each capability classification. For instance, in FY 2007 we divided $4,837,716 (the mean supplies expenditures for BMD capable cruisers) by $53,346,282 (the total PACFLT supplies expenditures). The result was that on average each BMD capable cruiser accounted for 4.69 percent of PACFLT supplies expenditures. We preformed this analysis only on the Supplies (T) and Equipment (W) expense elements because the other expense elements were not affected by the BMD configuration change.

3. Systems

The first objective in our systems analysis was to identify the 10 most costly systems for cruisers during FY 2006 and FY 2007 regardless of which fleet had the higher expenditures for each system. In order to do so, we were provided the aggregate listing of the Supplies expense elements (T) for each ship by SWE. The data included the following: NIIN, Ship Name, System Equipment Identification Code (EIC), Unit Price, Extended Price, and Quantity Ordered. We partitioned the data by their respective EIC. We summed the expenditures for each system and identified the most expensive systems. Then we partitioned it by fleet and NIIN. This provided the demand for each NIIN by fleet. Then we identified and presented the 10 NIINs in each EIC that caused one fleet to

have a greater difference in system expenditures than the other fleet. Each system included a demand summary which identified how many NIINs had a higher demand in one fleet than the other, and how many NIINs had the same demand in both fleets. The complete listing of NIINs with their demand and cost differences was not displayed in the presentation due to the data's volume.

Next, the objective was to identify the percentage of total system expenditures represented by the previously identified NIINs. We took the extended price[37] of the total demand of the NIINs and divided it by the total system expenditures.

To meet the final objective of identifying NIIN anomalies, we analyzed the data to isolate NIINS that met two of the three following conditions:

- Unit price of at least $5,000
- Total quantity demanded of 50 or more units
- Accounted for at least one percent of total system expenditures for both fleets

As previously stated, the unit price of at least $5,000 criteria was based on the requirement for Commanding Officers approval of all expenditures of $5,000 or more by COMNAVSURFOR Instruction 4400.1 and p. 7005 b. (6). The criteria of total quantities demanded of 50 or more units was based on our experience as Supply Officers. In the past, when demand has exceeded 50 units it has signaled a high usage item and requires more scrutiny. The criteria that the NIIN accounted for at least one percent of total system expenditures for both fleets was based on the objective to provide CNSF with cost drivers that accounted for a majority of expenditures for both fleets. This was performed on the 10 most costly systems for FY 2006 and FY 2007 regardless of which fleet had higher expenditures for the system.

[37] Extended price is equal to unit price multiplied by quantity ordered.

III. DATA ANALYSIS

A. SUB-ACCOUNTS

1. Utilities and Other Costs (SO)

In FY 2006, four of the five cruisers with the highest total SO expenditures were PACFLT cruisers. Also in FY 2006, the five cruisers with the lowest total SO expenditures were LANTFLT cruisers. Those results are reported in Table 6. Again in FY 2007, four of the five cruisers with the highest total SO expenditures were PACFLT cruisers. In FY 2007, one of the five cruisers with the lowest total SO expenditures were PACFLT cruisers. Those results are reported in Table 7.

NAME	FLEET	EXPENDITURES
PRINCETON	PAC	$1,128,544
BUNKER HILL	PAC	$1,086,735
ANTIETAM	PAC	$1,039,624
PORT ROYAL	PAC	$1,021,645
PHILIPPINE SEA	LANT	$918,317
CHOSIN	PAC	$912,304
SHILOH	PAC	$891,453
LAKE CHAMPLAIN	PAC	$855,112
LEYTE GULF	LANT	$842,001
COWPENS	PAC	$787,537
LAKE ERIE	PAC	$744,826
CHANCELLORSVILLE	PAC	$743,869
MOBILE BAY	PAC	$723,629
MONTEREY	LANT	$681,120
VICKSBURG	LANT	$659,357
CAPE ST GEORGE	LANT	$633,555
NORMANDY	LANT	$612,618
HUE CITY	LANT	$549,516
ANZIO	LANT	$512,249
SAN JACINTO	LANT	$507,223
VELLA GULF	LANT	$416,226
GETTYSBURG	LANT	$415,146

Table 6. FY 2006 Expenditures Ranked by Sub-Account SO.

NAME	FLEET	EXPENDITURES
ANTIETAM	PAC	$797,217
PRINCETON	PAC	$765,736
NORMANDY	LANT	$713,955
CHOSIN	PAC	$710,135
CHANCELLORSVILLE	PAC	$670,708
LAKE ERIE	PAC	$621,737
SHILOH	PAC	$605,224
BUNKER HILL	PAC	$579,143
PORT ROYAL	PAC	$575,333
VELLA GULF	LANT	$553,378
LAKE CHAMPLAIN	PAC	$527,633
COWPENS	PAC	$506,733
ANZIO	LANT	$502,877
GETTYSBURG	LANT	$491,434
MONTEREY	LANT	$470,420
PHILIPPINE SEA	LANT	$448,077
VICKSBURG	LANT	$436,109
MOBILE BAY	PAC	$430,739
SAN JACINTO	LANT	$399,988
HUE CITY	LANT	$314,273
CAPE ST GEORGE	LANT	$287,415
LEYTE GULF	LANT	$269,231

Table 7. FY 2007 Expenditures Ranked by Sub-Account SO.

Cruisers with the highest mean expenditures were assigned to PACFLT both fiscal years. For the baseline comparison, cruisers with the highest mean expenditures were Baseline 2 configured in FY 2006 and Baseline 3 configured in FY 2007. For the age comparison, cruisers with the highest mean expenditures were the five oldest in FY 2006 but were the five youngest in FY 2007. For PACFLT Battle E comparison, cruisers with the highest mean expenditures were non-Battle E winners both fiscal years. For LANTFLT Battle E comparison, cruisers with the highest mean expenditures were Battle E winners in FY 2006 but were non-Battle E winners in FY 2007. Those results are shown in Table 8.

SO MEAN EXPENDITURES FY 2006 - FY 2007		
CATEGORY	**FY 2006**	**FY 2007**
PACFLT	$906,918	$617,303
LANTFLT	$613,394	$444,287
Baseline 2	$836,978	$493,147
Baseline 3	$681,587	$603,164
Baseline 4	$748,249	$511,831
Five Youngest	$631,207	$573,833
Five Oldest	$914,205	$552,990
PACFLT Battle E Winner	$855,230	$1,007,314
PACFLT Non-Battle E Winner	$926,301	$1,195,379
LANTFLT Battle E Winner	$617,575	$875,445
LANTFLT Non-Battle E Winner	$611,825	$905,839

Table 8. SO Mean Expenditures FY 2006 - FY 2007.

2. Supplies and Equipage (SR)

In FY 2006, three of the five cruisers with the highest total SR expenditures were PACFLT cruisers. Also in FY 2006, one of the five cruisers with the lowest total SR expenditures were PACFLT cruisers. Those results are reported in Table 9. In FY 2007, four of the five cruisers with the highest total SR Expenditures were PACFLT cruisers. Also in FY 2007, one of the five with the lowest total SR expenditures were PACFLT cruisers. Those results are reported in Table 10.

NAME	FLEET	EXPENDITURES
ANTIETAM	PAC	$4,932,278
LEYTE GULF	LANT	$4,858,507
PHILIPPINE SEA	LANT	$4,627,099
CHANCELLORSVILLE	PAC	$4,446,530
PRINCETON	PAC	$4,432,796
VELLA GULF	LANT	$4,290,036
VICKSBURG	LANT	$4,186,645
LAKE CHAMPLAIN	PAC	$4,161,988
MONTEREY	LANT	$4,136,456
CHOSIN	PAC	$3,819,322
SHILOH	PAC	$3,807,821
PORT ROYAL	PAC	$3,675,886
BUNKER HILL	PAC	$3,672,643
COWPENS	PAC	$3,636,672
NORMANDY	LANT	$3,566,463
HUE CITY	LANT	$3,533,534
LAKE ERIE	PAC	$3,254,655
MOBILE BAY	PAC	$3,160,530
ANZIO	LANT	$2,663,810
SAN JACINTO	LANT	$2,568,757
CAPE ST GEORGE	LANT	$2,296,403
GETTYSBURG	LANT	$2,151,966

Table 9. FY 2006 Expenditures Ranked by Sub-Account SR.

NAME	FLEET	EXPENDITURES
ANTIETAM	PAC	$3,851,718
PRINCETON	PAC	$3,611,155
LAKE ERIE	PAC	$3,578,411
CHOSIN	PAC	$3,396,296
ANZIO	LANT	$3,111,805
COWPENS	PAC	$3,074,425
BUNKER HILL	PAC	$3,048,760
SHILOH	PAC	$2,869,630
VICKSBURG	LANT	$2,834,760
VELLA GULF	LANT	$2,829,607
LAKE CHAMPLAIN	PAC	$2,770,960
PORT ROYAL	PAC	$2,763,815
CHANCELLORSVILLE	PAC	$2,650,187
NORMANDY	LANT	$2,576,545
MONTEREY	LANT	$2,351,629
GETTYSBURG	LANT	$2,334,689
SAN JACINTO	LANT	$2,312,302
HUE CITY	LANT	$1,954,973
LEYTE GULF	LANT	$1,899,656
MOBILE BAY	PAC	$1,847,861
PHILIPPINE SEA	LANT	$1,798,328
CAPE ST GEORGE	LANT	$1,733,123

Table 10. FY 2007 Expenditures Ranked by Sub-Account SR.

Cruisers with the highest mean expenditures were assigned to PACFLT both fiscal years. For the baseline comparison, cruisers with the highest mean expenditures were Baseline 2 configured in FY 2006 and Baseline 4 configured in FY 2007. For the age comparison, cruisers with the highest mean expenditures were the five youngest in FY 2006 but were the five oldest in FY 2007. For PACFLT Battle E comparison, cruisers with the highest mean expenditures were non-Battle E winners both fiscal years. For LANTFLT Battle E comparison, cruisers with the highest mean expenditures were Battle E winners in FY 2006 and non-Battle E winners in FY 2007. Those results are shown in Table 11.

SR MEAN EXPENDITURES FY 2006 - FY 2007		
CATEGORY	**FY 2006**	**FY 2007**
PACFLT	$3,909,193	$3,042,111
LANTFLT	$3,534,516	$2,339,765
Baseline 2	$3,837,401	$2,504,227
Baseline 3	$3,414,655	$2,766,438
Baseline 4	$3,836,785	$2,785,824
Five Youngest	$4,040,755	$2,832,874
Five Oldest	$3,863,114	$2,884,252
PACFLT Battle E Winner	$3,345,071	$4,619,373
PACFLT Non-Battle E Winner	$4,085,604	$4,915,191
LANTFLT Battle E Winner	$3,651,426	$3,305,163
LANTFLT Non-Battle E Winner	$3,469,287	$3,604,968

Table 11. SR Mean Expenditures FY 2006 - FY 2007.

3. TAD for Shipboard & Afloat Staff Personnel (SX)

In FY 2006, two of the five cruisers with the highest total SX expenditures were PACFLT cruisers. Also in FY 2006, three of the five cruisers with the lowest SX expenditures were PACFLT cruisers. Those results are shown in Table 12. In FY 2007, three of the five cruisers with the highest expenditures were PACFLT cruisers. Also in FY 2007, one of the five cruisers with the lowest total SX expenditures were PACFLT cruisers. Those results are shown in Table 13. The noticeable trend throughout FY 2006 and FY 2007 was that nine of the top ten cruisers in SX expenditures were not homeported in either of the fleet concentration centers San Diego or Norfolk. They were either homeported in Mayport (LANTFLT) or OCONUS (PACFLT).

NAME	FLEET	EXPENDITURES
HUE CITY	LANT	$247,161
PORT ROYAL	PAC	$215,639
GETTYSBURG	LANT	$194,483
CHOSIN	PAC	$186,415
PHILIPPINE SEA	LANT	$167,462
LAKE ERIE	PAC	$152,268
CHANCELLORSVILLE	PAC	$146,558
CAPE ST GEORGE	LANT	$134,822
COWPENS	PAC	$130,337
VICKSBURG	LANT	$117,085
NORMANDY	LANT	$89,867
ANZIO	LANT	$78,716
LAKE CHAMPLAIN	PAC	$70,917
SHILOH	PAC	$62,390
SAN JACINTO	LANT	$49,706
MOBILE BAY	PAC	$45,816
LEYTE GULF	LANT	$41,473
ANTIETAM	PAC	$34,721
MONTEREY	LANT	$30,254
PRINCETON	PAC	$27,483
VELLA GULF	LANT	$27,399
BUNKER HILL	PAC	$11,863

Table 12. FY 2006 Expenditures Ranked by Sub-Account SX.

NAME	FLEET	EXPENDITURES
PORT ROYAL	PAC	$190,400
HUE CITY	LANT	$169,045
COWPENS	PAC	$158,645
SHILOH	PAC	$148,846
VICKSBURG	LANT	$129,389
CHOSIN	PAC	$121,669
PHILIPPINE SEA	LANT	$100,479
LAKE ERIE	PAC	$89,512
GETTYSBURG	LANT	$89,082
ANZIO	LANT	$84,616
ANTIETAM	PAC	$73,372
CHANCELLORSVILLE	PAC	$59,882
MOBILE BAY	PAC	$53,131
NORMANDY	LANT	$50,874
MONTEREY	LANT	$50,415
PRINCETON	PAC	$44,978
BUNKER HILL	PAC	$44,316
LEYTE GULF	LANT	$38,358
CAPE ST GEORGE	LANT	$29,622
SAN JACINTO	LANT	$26,042
LAKE CHAMPLAIN	PAC	$20,973
VELLA GULF	LANT	$15,515

Table 13. FY 2006 Expenditures Ranked by Sub-Account SX.

Cruisers with the highest mean expenditures were assigned to LANTFLT in FY 2006 and PACFLT in FY 2007. For the baseline comparison, cruisers with the highest mean expenditures were Baseline 3 configured in FY 2006 and Baseline 4 configured in FY 2007. For the age comparison, cruisers with the highest mean expenditures were the five youngest in FY 2006 and the five oldest in FY 2007. For PACFLT Battle E comparison, cruisers with the highest mean expenditures were non-Battle E winners both fiscal years. For LANTFLT Battle E comparison, cruisers with the highest mean expenditures were non-Battle E winners in FY 2006 and Battle E winners in FY 2007. Those results are shown in Table 14.

SX MEAN EXPENDITURES FY 2006 - FY 2007		
CATEGORY	**FY 2006**	**FY 2007**
PACFLT	$98,582	$91,430
LANTFLT	$107,130	$71,221
Baseline 2	$105,032	$50,953
Baseline 3	$156,852	$75,646
Baseline 4	$65,167	$108,735
Five Youngest	$129,795	$53,360
Five Oldest	$103,121	$81,228
PACFLT Battle E Winner	$69,982	$63,567
PACFLT Non-Battle E Winner	$109,307	$145,187
LANTFLT Battle E Winner	$75,352	$120,912
LANTFLT Non-Battle E Winner	$119,047	$71,015

Table 14. SX Mean Expenditures FY 2006 - FY 2007.

B. EXPENSE ELEMENTS

The data, in Table 15, shows that LANTFLT expended less in FY 2006 for expense elements Communications, Supplies, Equipment, Print and Publications, and Repair Aviation Depot Level Repairables (AVDLR). However, LANTFLT did spend more in the Travel of Personnel, Services, and Petroleum-Other (POL-Other) expense elements. The greatest difference was in the Supplies Expense Element. The second greatest difference was in the Equipment Expense Element. The third greatest difference was in the Communications Expense Element.

FY 2006 FLEET EXPENSE ELEMENT COMPARISON				
Expense Element	**PACFLT**	**LANTFLT**	**Percentage Difference of PACFLT Relative to LANTFLT**	**Absolute Difference of PACFLT to LANTFLT**
Supplies	$49,789,990	$42,808,033	16.31%	$6,981,957
Travel of Personnel	$1,434,881	$1,587,837	-9.63%	$152,956
Equipment	$1,239,806	$330,141	275.54%	$909,665
Services	$999,770	$1,677,773	-40.41%	$678,003
Repair – AVDLR	$281,074	$171,101	64.27%	$109,973
Communications	$173,472	$58,137	198.38%	$115,335
Petroleum Other	$101,813	$165,792	-38.59%	$63,979
Print & Reproduction	$40,823	$6,620	516.64%	$34,203
TOTAL	$54,061,629	$46,805,434	15.5%	$7,256,195

Table 15. FY 2006 Fleet Expense Element Comparison.

FY 2007 FLEET EXPENSE ELEMENT COMPARISON				
Expense Element	**PACFLT**	**LANTFLT**	**Percentage Difference of PACFLT Relative to LANTFLT**	**Absolute Difference of PACFLT to LANTFLT**
Supplies	$57,396,985	$44,456,605	29.11%	$12,940,380
Travel of Personnel	$1,732,305	$1,449,389	19.52%	$282,916
Equipment	$1,178,594	$1,259,963	-6.46%	$81,369
Services	$740,763	$2,134,750	-65.30%	$1,393,987
Communications	$234,025	$41,313	466.47%	$192,711
Repair - AVDLR	$97,756	$188,558	-48.16%	$90,802
Print & Reproduction	$79,884	$22,122	261.11%	$57,763
Petroleum Other	$64,015	$195,006	-67.17%	$130,991
TOTAL	$61,524,327	$49,747,706	23.67%	$11,776,621

Table 16. FY 2007 Fleet Expense Element Comparison.

Also, we concluded from the data, that in FY 2006, LANTFLT expended $4.2 million per ship whereas PACFLT expended $4.9 million per ship (a 13% differential). In FY 2007 LANTFLT expended $4.5 million per ship whereas PACFLT expended $5.6 million per ship (a 19% differential). We focused our research on the expense element that had the largest difference in expenditures between PACFLT and LANTFLT which was Supplies. The mean expenditures for each classification of cruisers are shown in Tables 17 and 18.

FY 2006 MEAN EXPENSE ELEMENT COMPARISON								
	Travel of Personnel	**Comms**	**Services**	**Supplies**	**POL-Other**	**Equipment**	**Print & Reproduction**	**Repair - AVDLR**
PACFLT	$130,444	$15,770	$90,888	$4,526,363	$9,256	$112,710	$3,711	$25,552
LANTFLT	$144,349	$5,285	$152,525	$3,891,639	$15,072	$30,013	$602	$15,555
CONUS	$65,769	$15,115	$52,143	$4,760,852	$15,504	$92,134	$2	$22,874
OCONUS	$208,053	$16,556	$137,383	$4,244,976	$1,758	$137,401	$8,163	$28,766
MAYPORT	$209,063	$7,105	$98,858	$4,070,939	$20,099	$20,857	$397	$14,625
NORFOLK	$107,369	$4,245	$183,192	$3,789,183	$12,200	$35,244	$719	$16,086
BL 2	$84,200	$11,332	$145,672	$4,544,469	$12,096	$86,383	$0	$26,763
BL 3	$135,781	$11,446	$63,493	$4,250,747	$18,033	$59,457	$4,773	$19,988
BL 4	$179,848	$9,290	$141,876	$3,920,251	$8,304	$67,614	$2,089	$16,101
BMD	-	-	-	$4,195,491	-	$137,652	-	-
NON-BMD	-	-	-	$4,650,440	-	$103,356	-	-

Table 17. FY 2006 Mean Expense Element Expenditures.

FY 2007 MEAN EXPENSE ELEMENT COMPARISON								
	Travel of Personnel	Comms	Services	Supplies	POL-Other	Equipment	Print & Reproduction	Repair - AVDLR
PACFLT	$157,482	$21,275	$67,342	$5,217,908	$5,820	$107,145	$7,262	$8,887
LANTFLT	$131,763	$3,756	$194,068	$4,041,510	$17,728	$114,542	$2,011	$17,142
CONUS	$86,353	$23,565	$61,007	$5,172,420	$4,256	$123,217	$584	$7,316
OCONUS	$242,838	$18,526	$74,944	$5,272,493	$7,696	$87,858	$15,276	$10,773
MAYPORT	$189,147	$3,913	$268,051	$3,901,486	$21,370	$135,387	$1,781	$9,124
NORFOLK	$98,971	$3,666	$151,792	$4,121,523	$15,647	$102,631	$2,143	$21,723
BL 2	$90,400	$12,807	$74,238	$4,335,320	$5,970	$84,065	$1,518	$20,139
BL 3	$149,511	$15,998	$194,442	$4,720,492	$15,545	$118,689	$5,792	$10,169
BL 4	$183,536	$9,967	$132,132	$4,798,156	$13,773	$126,441	$6,292	$9,370
BMD	-	-	-	$5,160,048	-	$80,177	-	-
NON-BMD	-	-	-	$5,239,605	-	$117,258	-	-

Table 18. FY 2007 Mean Expense Element Expenditures.

1. Supplies

a. Baseline Comparison

In FY 2006, the mean supplies expenditures for Baseline 3 cruisers was $4,250,747, while the Baseline 2 and Baseline 4 means were $4,544,469 and $3,920,251 respectively. In FY 2007, the mean Supplies expenditures for a Baseline 3 cruiser was $4,720,492, while the Baseline 2 mean was $4,335,320, and the Baseline 4 mean was $4,798,156. Those results are shown in Table 19.

b. Fleet Comparison

In FY 2006, PACFLT cruisers expended $6.98 million more on supplies than LANTFLT cruisers. The mean supplies expenditures for a PACFLT cruiser was $4,526,363 on compared to $3,891,639 for a LANTFLT cruiser. In FY 2007, PACFLT cruisers expended $12.9 million more than LANTFLT cruisers on supplies. The mean supplies expenditures for a PACFLT cruiser was $5,226,037 for supplies compared to $4,041,510 for a LANTFLT cruiser. Those results are shown in Table 19.

c. PACFLT Homeport Comparison

In FY 2006, CONUS cruisers had the highest mean expenditures for supplies spending $4,760,852 where as the mean for OCONUS cruisers was $4,244,976.

In FY 2007 OCONUS cruisers had the highest mean expenditures for supplies spending $5,272,493 while the mean for CONUS cruisers was $5,172,420. Those results are shown in Table 19.

d. LANTFLT Homeport Comparison

In FY 2006, the mean for Mayport cruisers was $4,070,939 while the mean for Norfolk cruisers was $3,789,183. In FY 2007, the mean for Mayport cruisers was $3,901,486 while the mean for Norfolk cruisers was $4,121,523. Those results are shown in Table 19.

e. PACFLT Ballistic Missile Defense Capable Comparison

In FY 2006, the mean supplies expenditures for BMD cruisers was $4,195,491 compared to the mean for non-BMD cruisers which was $4,650,440. In FY 2007, the mean equipment expenditures for BMD cruisers was $5,160,048 while the mean for non-BMD cruisers was $5,239,605. Those results are shown in Table 19.

Table 19 summarizes the categories' Supplies expenditures for FY 2006 and FY 2007. The table also includes the mean Supplies Expense Element expenditures for each category. Finally, the percentage of Supplies Expense Element expenditures each cruiser had for the given FY by each category is included. For the Baseline comparison, cruisers with the highest mean expenditures were Baseline 2 configured in FY 2006 and Baseline 4 configured in FY 2007. For the Fleet comparison, cruisers with the highest mean expenditures were assigned to PACFLT both fiscal years. For PACFLT Homeport comparison, cruisers with the highest mean expenditures were homeported in CONUS both fiscal years. For LANTFLT Homeport comparison, cruisers with the highest mean expenditures were homeported in Mayport in FY 2006 and in Norfolk for FY2007. For the BMD comparison, cruisers with the highest mean expenditures were Non-BMD capable both fiscal years.

FY 2006 - FY 2007 SUPPLIES EXPENSE ELEMENT SUMMARY						
Category	**FY 2006 Expenditures**	**Mean**	**Percentage**	**FY 2007 Expenditures**	**Mean**	**Percentage**
Baseline 2	$31,811,283	$4,544,469	4.91%	$30,347,237	$4,335,320	4.26%
Baseline 3	$25,504,483	$4,250,747	4.59%	$28,322,953	$4,720,492	4.63%
Baseline 4	$35,282,257	$3,920,251	4.23%	$43,183,400	$4,798,156	4.71%
Total	$92,598,023			$101,853,590		
PACFLT	$49,789,990	$4,526,363	4.89%	$57,396,985	$5,217,908	5.12%
LANTFLT	$42,808,033	$3,891,639	4.20%	$44,456,605	$4,041,510	3.97%
Total	$92,598,023			$101,853,590		
CONUS	$28,565,111	$4,760,852	9.56%	$31,034,522	$5,172,420	9.01%
OCONUS	$21,224,879	$4,244,976	8.53%	$26,362,463	$5,272,493	9.19%
Total	$49,789,990			$57,396,985		
Mayport	$16,283,754	$4,070,939	9.51%	$15,605,944	$3,901,486	8.78%
Norfolk	$26,524,279	$3,789,183	8.85%	$28,850,661	$4,121,523	9.27%
Total	$42,808,033			$44,456,605		
BMD Capable	$12,586,472	$4,195,491	4.53%	$15,480,144	$5,160,048	5.57%
Non-BMD Capable	$37,203,518	$4,650,440	5.02%	$41,916,841	$5,239,605	5.66%
Total	$92,598,023			$101,853,590		

Table 19. FY 2006 - FY 2007 Supplies Expense Element Summary.

2. Travel of Personnel

a. Baseline Comparison

In FY 2006, Travel of Personnel expenditures among the different baselines were as follows: the mean travel of personnel expenditures for a Baseline 4 cruiser was $179,848 while the means for Baseline 2 and Baseline 3 were $84,200 and $135,781 respectively. In FY 2007, the mean travel of personnel expenditures for a Baseline 4 cruiser was $183,536 while the means for Baseline 2 and Baseline 3 were $90,400 and $149,511 respectively. Those results are shown in Table 20.

b. Fleet Comparison

In FY 2006, LANTFLT cruisers expended approximately $153,000 more than PACFLT cruisers on travel of personnel. The mean travel of personnel expenditures

for a LANTFLT cruiser was $144,349 whereas the mean for PACFLT cruiser was only $130,444. In FY 2007, the difference in travel of personnel expenditures between LANTFLT and PACFLT cruisers grew to almost $283,000. However, in FY 2007 PACFLT was more expensive. The mean travel of personnel expenditures for a LANTFLT cruiser was $131,763. On the other hand, the mean for a PACFLT cruiser was $157,482. Overall, the total travel of personnel expenditures for cruisers increased from $3,022,718 in FY 2006 to $3,181,694 in FY 2007. Those results are shown in Table 20.

c. PACFLT Homeport Comparison

In FY 2006, OCONUS cruisers incurred a mean cost of $208,053 on travel of personnel compared to $65,769 for a CONUS cruiser. In FY 2007, CONUS cruisers incurred a mean cost of $86,353 on travel of personnel compared to OCONUS cruisers' mean cost of $242,838. Those results are shown in Table 20.

d. LANTFLT Homeport Comparison

In FY 2006 a Norfolk cruiser expended $107,369 while a Mayport cruiser expended $209,063. In FY 2007, Norfolk cruisers incurred a mean cost of $98,971 compared to Mayport cruisers that incurred a mean cost of $189,147. Those results are shown in Table 20.

Table 20 summarizes the categories' Travel of Personnel expenditures for FY 2006 and FY 2007. The table also includes the mean Travel of Personnel expense element expenditures for each category. Finally, the percentage of Travel of Personnel Expense Element expenditures each cruiser incurred for the given fiscal year by each category is included. For the Baseline comparison, cruisers with the highest mean expenditures were Baseline 4 configured in both fiscal years. For the fleet comparison, cruisers with the highest mean expenditures were assigned to LANTFLT in FY 2006 and PACFLT in FY 2007. For PACFLT Homeport comparison, cruisers with the highest mean expenditures were homeported in OCONUS both fiscal years. For LANTFLT Homeport comparison, cruisers with the highest mean expenditures were homeported in Mayport both fiscal years.

FY 2006 - FY 2007 TRAVEL OF PERSONNEL EXPENSE ELEMENT SUMMARY						
Category	**FY 2006 Expenditures**	**Mean**	**Percentage**	**FY 2007 Expenditures**	**Mean**	**Percentage**
Baseline 2	$589,400	$84,200	2.79%	$632,802	$90,400	2.84%
Baseline 3	$814,689	$135,781	4.49%	$897,066	$149,511	4.70%
Baseline 4	$1,618,630	$179,848	5.95%	$1,651,827	$183,536	5.77%
Total	$3,022,718			$3,181,694		
PACFLT	$1,434,881	$130,444	4.32%	$1,732,305	$157,482	4.95%
LANTFLT	$1,587,837	$144,349	4.78%	$1,449,389	$131,763	4.14%
Total	$3,022,718			$3,181,694		
CONUS	$394,615	$65,769	4.58%	$518,117	$86,353	4.98%
OCONUS	$1,040,266	$208,053	14.50%	$1,214,188	$242,838	14.02%
Total PACFLT	$1,434,881			$1,732,305		
Mayport	$836,252	$209,063	13.17%	$756,589	$189,147	13.05%
Norfolk	$751,585	$107,369	6.76%	$692,800	$98,971	6.83%
Total LANTFLT	$1,587,837			$1,449,389		

Table 20. FY 2006 - FY 2007 Travel of Personnel Expense Element Summary.

3. Equipment

a. Baseline Comparison

In FY 2006, the mean expenditure for Baseline 3 cruisers was $59,457 while the means for Baseline 2 and Baseline 4 were $86,383 and $67,614 respectively. In FY 2007, the mean expenditure for Baseline 2 cruisers was $84,065 while the means for Baseline 3 and Baseline 4 were $118,689 and $126,441 respectively. Those results are shown in Table 21.

b. Fleet Comparison

In FY 2006, PACFLT cruisers' equipment expenditures exceeded LANTFLT cruisers by $909,000. This difference equated to PACFLT cruisers spending roughly four times the amount that LANTFLT cruisers expended on equipment. In FY 2007, LANTFLT cruisers expended $81,000 more than PACFLT cruisers on equipment expenditures. In FY 2007, expenditures for equipment by LANTFLT cruisers increased by $929,000 which equated to a 380 percent increase from the previous year.

However, expenditures by PACFLT cruisers for the same period decreased by $61,000. Those results are shown in Table 21.

c. PACFLT Homeport Comparison

In FY 2006, the mean expenditures for OCONUS cruisers was $137,401 compared to a $92,134 mean for CONUS cruisers. In FY 2007 PACFLT OCONUS cruisers had the lowest mean of $87,858 whereas the mean for CONUS cruisers was $123,217. Those results are shown in Table 21.

d. LANTFLT Homeport Comparison

In FY 2006, Mayport cruisers had the lowest mean equipment expenditures with $20,857 while the mean for Norfolk cruisers was $35,244. In FY 2007, Mayport cruisers had the highest mean equipment expenditures of $135,387 while the mean for Norfolk cruisers was $102,631. Those results are shown in Table 21.

e. PACFLT Ballistic Missile Defense Capable Comparison

In FY 2006, the mean equipment expenditures for BMD cruisers was $137,652 compared to that of non-BMD cruisers of $103, 356. In FY 2007, the mean equipment expenditures for BMD cruisers was $80,177 compared to the mean for non-BMD cruisers of $117, 258. Those results are shown in Table 21.

Table 21 summarizes the categories' Equipment expenditures for FY 2006 and FY 2007. The table also includes the mean Equipment Expense Element expenditures for each category. Finally, the percentage of Equipment Expense Element expenditures each cruiser for the given fiscal year by each category is included. For the Baseline comparison, cruisers with the highest mean expenditures were Baseline 2 configured in FY 2006 and Baseline 4 configured in FY 2007. For the Fleet comparison, cruisers with the highest mean expenditures were assigned to PACFLT in FY 2006 and LANTFLT in FY 2007. For PACFLT Homeport comparison, cruisers with the highest mean expenditures were assigned to OCONUS in FY 2006 and CONUS in FY 2007. For LANTFLT Homeport comparison, cruisers with the highest mean expenditures were homeported in Norfolk in FY 2006 and Mayport for FY 2007. For the BMD comparison, cruisers with the highest mean expenditures were BMD capable in FY 2006 and Non-BMD capable in FY 2007.

FY 2006 - FY 2007 EQUIPMENT EXPENSE ELEMENT SUMMARY						
Category	**FY 2006 Expenditures**	**Mean**	**Percentage**	**FY 2007 Expenditures**	**Mean**	**Percentage**
Baseline 2	$604,681	$86,383	5.50%	$588,457	$84,065	3.45%
Baseline 3	$356,744	$59,457	3.79%	$712,135	$118,689	4.87%
Baseline 4	$608,523	$67,614	4.31%	$1,137,965	$126,441	5.19%
Total	$1,569,947			$2,438,557		
PACFLT	$1,239,806	$112,710	7.18%	$1,178,594	$107,145	4.39%
LANTFLT	$330,141	$30,013	1.91%	$1,259,963	$114,542	4.70%
Total	$1,569,947			$2,438,557		
CONUS	$552,803	$92,134	7.43%	$739,303	$123,217	10.45%
OCONUS	$687,003	$137,401	11.08%	$439,291	$87,858	7.45%
Total PACFLT	$1,239,806			$1,178,594		
Mayport	$83,430	$20,857	6.32%	$541,547	$135,387	10.75%
Norfolk	$246,711	$35,244	10.68%	$718,417	$102,631	8.15%
Total LANTFLT	$330,141			$1,259,963		
BMD Capable	$412,955	$137,652	8.77%	$240,530	$80,177	5.11%
Non-BMD Capable	$826,851	$103,356	6.58%	$938,064	$117,258	7.47%
Total PACFLT	$1,569,947			$2,438,557		

Table 21. FY 2006 - FY 2007 Equipment Expense Element Summary.

4. Services

a. Baseline Comparison

In FY 2006, the mean services expenditures for Baseline 3 cruisers was $63,493 while the means for Baseline 2 and Baseline 4 were $145,672 and $141,876 respectively. In FY 2007, the mean services expenditures for Baseline 2 cruisers was $74,238 while the means for Baseline 3 and Baseline 4 were $194,442 and $132,132 respectively. Those results are shown in Table 22.

b. Fleet Comparison

In FY 2006, LANTFLT cruisers expended $678,000 more than PACFLT cruisers on services. The mean for a LANTFLT cruiser was $152,525 compared to $90,888 for a PACFLT cruiser. In FY 2007, LANTFLT cruisers expended approximately $1.4 million more than PACFLT cruisers on services. The mean for a LANTFLT cruiser was $194,068 compared to $67,342 for a PACFLT cruiser. From FY

2006 to FY 2007, total expenditures for services increased for LANTFLT cruisers by $456,000 while expenditures for services decreased for PACFLT cruisers by $259,000. Those results are shown in Table 22.

c. PACFLT Homeport Comparison

In FY 2006, the mean services expenditures for PACFLT CONUS cruisers was $52,143 while OCONUS had a mean of $137,383. In FY 2007, the mean services expenditures for PACFLT CONUS cruisers was $61,007 while OCONUS had a mean of $74,944. Those results are shown in Table 22.

d. LANTFLT Homeport Comparison

In FY 2006 a Norfolk cruiser incurred a mean cost of $183,192 on services compared to a mean of $98,858 for a Mayport cruiser. In FY 2007, Mayport cruisers had the highest mean expenditures for services of $268,051, while the mean for Norfolk cruisers was $151,792. Those results are shown in Table 22.

Table 22 summarizes the categories' Services expenditures for FY 2006 and FY 2007. The table also includes the mean Services Expense Element expenditures for each category. Finally, the percentage of Services Expense Element expenditures each cruiser had for the given fiscal year by each category is included. For the Baseline comparison, cruisers with the highest mean expenditures were Baseline 2 configured in FY 2006 and Baseline 4 configured in FY 2007. For the Fleet comparison, cruisers with the highest mean expenditures were assigned to LANTFLT both fiscal years. For PACFLT homeport comparison, cruisers with the highest mean expenditures were assigned to OCONUS in both fiscal years. For LANTFLT homeport comparison, cruisers with the highest mean expenditures were homeported in Norfolk in FY 2006 and in Mayport in FY 2007.

FY 2006 - FY 2007 SERVICES EXPENSE ELEMENT SUMMARY						
Category	**FY 2006 Expenditures**	**Mean**	**Percentage**	**FY 2007 Expenditures**	**Mean**	**Percentage**
Baseline 2	$1,019,703	$145,672	5.44%	$519,668	$74,238	2.58%
Baseline 3	$380,955	$63,493	2.37%	$1,166,653	$194,442	6.76%
Baseline 4	$1,276,885	$141,876	5.30%	$1,189,192	$132,132	4.60%
Total	$2,677,543			$2,875,513		
PACFLT	$999,770	$90,888	3.39%	$740,763	$67,342	2.34%
LANTFLT	$1,677,773	$152,525	5.70%	$2,134,750	$194,068	6.75%
Total	$2,677,543			$2,875,513		
CONUS	$312,855	$52,143	5.22%	$366,044	$61,007	8.26%
OCONUS	$686,915	$137,383	13.74%	$374,719	$74,944	10.12%
Total PACFLT	$999,770			$740,763		
Mayport	$395,431	$98,858	5.89%	$1,072,204	$268,051	12.56%
Norfolk	$1,282,342	$183,192	10.92%	$1,062,546	$151,792	7.11%
Total LANTFLT	$1,677,773			$2,134,750		

Table 22. FY 2006 - FY 2007 Services Expense Element Summary.

5. Repair-AVDLR

a. Baseline Comparison

In FY 2006 the mean Repair-AVDLR expenditures for Baseline 2 cruisers was $26,763 while the means for Baseline 3 and Baseline 4 were $19,988 and $16,101 respectively. In FY 2007, the mean Repair-AVDLR expenditures for Baseline 4 cruisers was $9,370 whereas the means for Baseline 2 and Baseline 3 were $20,139 and $10,169 respectively. Those results are shown in Table 23.

b. Fleet Comparison

In FY 2006, PACFLT cruisers expended $110,000 more than LANTFLT cruisers on AVDLRs. The mean Repair-AVDLR expenditures for PACFLT cruisers was $25,552 per ship compared to the mean for LANTFLT cruises of $15,555. In FY 2007, LANTFLT cruisers expended $91,000 more on AVDLRs than PACFLT cruisers. This difference equated to LANTFLT cruisers incurring twice as much in AVDLR costs as PACFLT cruisers. From FY 2006 to FY 2007, PACFLT cruisers decreased their

AVDLR expenditures by $183,000 whereas LANTFLT cruisers increased their AVDLR expenditures by $17,000. Those results are shown in Table 23.

c. PACFLT Homeport Comparison

In FY 2006, OCONUS cruisers had the highest mean expenditures of $28,766 whereas PACFLT CONUS cruisers had a mean of $22,874. In FY 2007, OCONUS cruisers had a mean of $10,773, and PACFLT CONUS cruisers had a mean of $7,316. Those results are shown in Table 23.

d. LANTFLT Homeport Comparison

In FY 2006, the mean Repair-AVDLR expenditures for Mayport cruisers was $14,625 and the mean for Norfolk cruisers was $16,086. In FY 2007, Norfolk cruisers had the highest mean expenditures with $21,723. On the other hand, Mayport cruisers had a mean of $9,124. Those results are shown in Table 23.

Table 23 summarizes the categories' Repair-AVDLR expenditures for FY 2006 and FY 2007. The table also includes the mean Repair-AVDLR Expense Element expenditures for each category. Finally, the percentage of Repair-AVDLR Expense Element expenditures each cruiser had for the given fiscal year by each category is included. For the Baseline comparison, cruisers with the highest mean expenditures were Baseline 2 configured both fiscal years. For the PACLTFLT homeport comparison, cruisers with the highest mean expenditures were assigned to PACFLT in FY 2006 and LANTFLT in FY 2007. For the PACFLT homeport comparison, cruisers with the highest mean expenditures were assigned to OCONUS in both fiscal years. For the LANTFLT homeport comparison, cruisers with the highest mean expenditures were homeported in Norfolk both fiscal years.

FY 2006 - FY 2007 REPAIR-AVDLR EXPENSE ELEMENT SUMMARY						
Category	**FY 2006 Expenditures**	**Mean**	**Percentage**	**FY 2007 Expenditures**	**Mean**	**Percentage**
Baseline 2	$187,340	$26,763	5.92%	$140,975	$20,139	7.03%
Baseline 3	$119,927	$19,988	4.42%	$61,013	$10,169	3.55%
Baseline 4	$144,908	$16,101	3.56%	$84,326	$9,370	3.27%
Total	$452,175			$286,314		
PACFLT	$281,074	$25,552	5.65%	$97,756	$8,887	3.10%
LANTFLT	$171,101	$15,555	3.44%	$188,558	$17,142	5.99%
Total	$452,175			$286,314		
CONUS	$137,242	$22,874	8.14%	$43,893	$7,316	7.48%
OCONUS	$143,832	$28,766	10.23%	$53,863	$10,773	11.02%
Total PACFLT	$281,074			$97,756		
Mayport	$58,500	$14,625	8.55%	$36,495	$9,124	4.84%
Norfolk	$112,601	$16,086	9.40%	$152,063	$21,723	11.52%
Total LANTFLT	$171,101			$188,558		

Table 23. FY 2006 - FY 2007 Repair-AVDLR Expense Element Summary.

6. Communications

a. Baseline Comparison

In FY 2006, the mean communications expenditures for a Baseline 4 cruiser was $9,290 whereas the means for Baseline 2 and Baseline 3 were $11,332 and $11,446 respectively. In FY 2007, the mean communications expenditures for a Baseline 4 cruiser was $9,967 while the means for Baseline 2 and Baseline 3 were $12,807 and $15,998 respectively. Those results are shown in Table 24.

b. Fleet Comparison

In FY 2006, PACFLT cruisers incurred costs of $115,335 more than LANTFLT cruisers on communications. Basically, PACFLT cruisers expended three times that of LANTFLT cruisers. The mean communications expenditures for PACFLT cruisers were $15,770. For FY 2007, PACFLT cruisers expended approximately six times more than LANTFLT cruisers on communications. In FY 2007, PACFLT cruisers expended a total of $234,025 as compared to the $41,313 expended by LANTFLT

cruisers. From FY 2006 to FY 2007, communication expenditures increased for PACFLT cruisers by $60,000 while communication expenditures decreased for LANTFLT cruisers by $17,000. Those results are shown in Table 24.

c. PACFLT Homeport Comparison

In FY 2006, mean communications expenditures for PACFLT CONUS cruisers was $15,115 as compared to the mean for OCONUS assigned cruisers which was $16,556. In FY 2007, the mean communications expenditures for PACFLT CONUS cruisers was $23,565 while the mean for OCONUS assigned cruisers was $18,526. Those results are shown in Table 24.

d. LANTFLT Homeport Comparison

For LANTFLT cruisers, the mean for a Norfolk cruiser was $4,245 compared to the mean for a Mayport cruiser which was $7,105. In FY 2007, the mean for a Norfolk cruiser was $3,666 compared to the mean for a Mayport cruiser which was $3,913. Those results are shown in Table 24.

Table 24 summarizes the categories' Communications expenditures for FY 2006 and FY 2007. The table also includes the mean Communications Expense Element expenditures for each category. Finally, the percentage of Communications Expense Element expenditures each cruiser had for the given fiscal year by each category is included. For the Baseline comparison, cruisers with the highest mean expenditures were Baseline 3 configured in both fiscal years. For the Fleet comparison, cruisers with the highest mean expenditures were assigned to PACFLT both fiscal years. For the PACFLT Homeport comparison, cruisers with the highest mean expenditures were assigned to in OCONUS in FY 2006 and CONUS in FY 2007. For the LANTFLT Homeport comparison, cruisers with the highest mean expenditures were homeported in Mayport both fiscal years.

FY 2006 - FY 2007 COMMUNICATIONS EXPENSE ELEMENT SUMMARY						
Category	**FY 2006 Expenditures**	**Mean**	**Percentage**	**FY 2007 Expenditures**	**Mean**	**Percentage**
Baseline 2	$79,325	$11,332	4.89%	$89,649	$12,807	4.65%
Baseline 3	$68,677	$11,446	4.94%	$95,985	$15,998	5.81%
Baseline 4	$83,607	$9,290	4.01%	$89,704	$9,967	3.62%
Total	$231,609			$275,338		
PACFLT	$173,472	$15,770	6.81%	$234,025	$21,275	7.73%
LANTFLT	$58,137	$5,285	2.28%	$41,313	$3,756	1.36%
Total	$231,609			$275,338		
CONUS	$90,692	$15,115	8.71%	$141,392	$23,565	10.07%
OCONUS	$82,780	$16,556	9.54%	$92,632	$18,526	7.8%
Total PACFLT	$173,472			$234,025		
Mayport	$28,420	$7,105	12.22%	$15,651	$3,913	9.47%
Norfolk	$29,717	$4,245	7.30%	$25,662	$3,666	8.87%
Total LANTFLT	$58,137			$41,313		

Table 24. FY 2006 - FY 2007 Communications Expense Element Summary.

7. POL-Other

a. Baseline Comparison

In FY 2006, the mean POL-Other expenditures for Baseline 4 cruisers was $8,304 while the means for Baseline 2 and Baseline 3 were $12,096 and $18,033 respectively. In FY 2007, the mean POL-Other expenditures for Baseline 2 cruisers was $5,970 while the means for Baseline 3 and Baseline 4 were $15,545 and $13,773. As in FY 2006, Baseline 3 cruisers had the highest mean expenditures among the different baselines. Those results are shown in Table 25.

b. Fleet Comparison

During FY 2006, LANTFLT cruisers expended $64,000 more on POL-Other than PACFLT cruisers. In FY 2007, LANTFLT cruisers expended approximately $131,000 more on POL-Other than PACFLT cruisers. This difference equated to LANTFLT cruisers incurring costs which were three times the amount that PACFLT cruisers incurred on POL-Other during the fiscal year. However, total expenditures for

PACFLT cruisers decreased by $37,000 whereas expenditures for LANTFLT cruisers increased by $29,000. From FY 2006 to FY 2007, total expenditures for both fleets decreased by a combined $8,000. Those results are shown in Table 25.

c. PACFLT Homeport Comparison

In FY 2006, OCONUS cruisers had the lowest mean expenditures on POL-Other spending $1,758, whereas the mean for PACFLT CONUS cruisers was $15,504. In FY 2007, PACFLT CONUS cruisers had the lowest mean expenditures with $4,256. While the mean for OCONUS cruisers was $7,696, this amount was a 450 percent increase in their expenditures from FY 2006. Those results are shown in Table 25.

d. LANTFLT Homeport Comparison

In FY 2006, the mean POL-Other expenditures for Mayport cruisers was $20,099 compared to $12,200 for Norfolk cruisers. In FY 2007, the mean POL-Other expenditures for Mayport cruisers was $21,370 compared to the mean of Norfolk cruisers which was $15,647. Those results are shown in Table 25.

Table 25 summarizes the categories' POL-Other expenditures for FY 2006 and FY 2007. The table also includes the mean POL-Other Expense Element expenditures for each category. Finally, the percentage of POL-Other Expense Element expenditures each cruiser had for the given fiscal year by each category is included. For the Baseline comparison, cruisers with the highest mean expenditures were Baseline 3 configured in both fiscal years. For the Fleet comparison, cruisers with the highest mean expenditures were assigned to LANTFLT both fiscal years. For PACFLT Homeport comparison, cruisers with the highest mean expenditures were assigned to CONUS in FY 2006 and OCONUS in FY 2007. For LANTFLT Homeport comparison, cruisers with the highest mean expenditures were homeported in Mayport in both fiscal years.

FY 2006 - FY 2007 POL-OTHER EXPENSE ELEMENT SUMMARY						
Category	**FY 2006 Expenditures**	**Mean**	**Percentage**	**FY 2007 Expenditures**	**Mean**	**Percentage**
Baseline 2	$84,670	$12,096	4.52%	$41,790	$5,970	2.30%
Baseline 3	$108,196	$18,033	6.74%	$93,269	$15,545	6.00%
Baseline 4	$74,739	$8,304	3.10%	$123,961	$13,773	5.32%
Total	$267,605			$259,021		
PACFLT	$101,813	$9,256	3.46%	$64,015	$5,820	2.25%
LANTFLT	$165,792	$15,072	5.63%	$195,006	$17,728	6.84%
Total	$267,605			$259,021		
CONUS	$93,025	$15,504	15.23%	$25,534	$4,256	6.65%
OCONUS	$8,788	$1,758	1.73%	$38,481	$7,696	12.02%
Total PACFLT	$101,813			$64,015		
Mayport	$80,395	$20,099	12.12%	$85,480	$21,370	10.96%
Norfolk	$85,397	$12,200	7.36%	$109,526	$15,647	8.02%
Total LANTFLT	$165,792			$195,006		

Table 25. FY 2006 - FY 2007 POL-Other Expense Element Summary.

8. Printing and Reproduction

a. Baseline Comparison

In FY 2006, Baseline 2 cruisers did not have any expenditures for printing and reproduction while the mean expenditures for Baseline 3 and Baseline 4 was $4,773 and $2,089 respectively. In FY 2007, the mean printing and reproduction expenditures for Baseline 2 cruisers was $1,518 while the means for Baseline 3 and Baseline 4 were $5,792 and $6,292 respectively. Those results are shown in Table 26.

b. Fleet Comparison

In FY 2006, PACFLT cruisers expended $34,000 more on printing and reproduction than LANTFLT cruisers. This difference equated to PACFLT cruisers expending six times the amount expended by LANTFLT cruisers. For FY 2007, PACFLT cruisers incurred costs of $57,000 more on printing and reproduction than LANTFLT cruisers. This difference equated to PACFLT cruisers expending 3.6 times the amount that LANTFLT cruisers expended. From FY 2006 to FY 2007, total expenditures for printing and reproduction for both fleets increased from $47,443 to $102,006. Those results are shown in Table 26.

c. PACFLT Homeport Comparison

In FY 2006, OCONUS cruisers had the highest mean expenditures of $8,163, whereas the mean printing and reproduction expenditures for PACFLT CONUS cruisers was $2. In FY 2007, OCONUS cruisers again had the highest mean expenditures with $15,276, whereas PACFLT CONUS cruisers had a mean of $584. Those results are shown in Table 26.

d. LANTFLT Homeport Comparison

In FY 2006, the mean printing and reproduction expenditures for Mayport cruisers was $397, and the mean expenditures for Norfolk cruisers was $719. In FY 2007, the mean printing and reproduction expenditures for Mayport cruisers was $1,781, and the mean expenditures for Norfolk cruisers was $2,143. Those results are shown in Table 26.

Table 26 summarizes the categories' Print and Reproduction expenditures for FY 2006 and FY 2007. The table also includes the mean Print and Reproduction Expense Element expenditures for each category. Finally, the percentage of Print and Reproduction Expense Element expenditures each cruiser had for the given FY by each category is included. For the Baseline comparison, cruisers with the highest mean expenditures were Baseline 3 configured in FY 2006 and Baseline 4 configured in FY 2007. For the Fleet comparison, cruisers with the highest mean expenditures were assigned to PACFLT both fiscal years. For PACFLT Homeport comparison, cruisers with the highest mean expenditures were assigned to OCONUS in both fiscal years. For LANTFLT Homeport comparison, cruisers with the highest mean expenditures were homeported in Norfolk both fiscal years.

FY 2006 - FY 2007 PRINT & REPRODUCTION EXPENSE ELEMENT SUMMARY						
Category	**FY 2006 Expenditures**	**Mean**	**Percentage**	**FY 2007 Expenditures**	**Mean**	**Percentage**
Baseline 2	$0	$0	0.00%	$10,627	$1,518	1.49%
Baseline 3	$28,639	$4,773	10.06%	$34,754	$5,792	5.68%
Baseline 4	$18,804	$2,089	4.40%	$56,625	$6,292	6.17%
Total	$47,443			$102,006		
PACFLT	$40,823	$3,711	7.82%	$79,884	$7,262	9.09%
LANTFLT	$6,620	$602	1.27%	$22,122	$2,011	2.52%
Total	$47,443			$102,006		
CONUS	$9	$2	0.00%	$3,505	$584	0.21%
OCONUS	$40,814	$8,163	20.00%	$76,380	$15,276	5.38%
Total PACFLT	$40,823			$79,884		
Mayport	$1,590	$397	6.00%	$7,122	$1,781	8.05%
Norfolk	$5,030	$719	10.85%	$15,000	$2,143	9.69%
Total LANTFLT	$6,620			$22,122		

Table 26. FY 2006 - FY 2007 Print & Reproduction Expense Element Summary.

C. SYSTEMS FY 2006

First, we identified the systems generating the most expenditures in FY 2006. The results are displayed in Table 27, showing the nomenclature of the system and the costs incurred by each fleet on the system. Additionally, Table 27 shows how much more or less costly LANTFLT was to PACFLT in terms of dollars and percent.

FY 2006 CRUISERS' MOST COSTLY SYSTEMS				
SYSTEM	LANTFLT	PACFLT	LANT PERCENT MORE/(LESS) EXPENSIVE	LANT MORE/(LESS) EXPENSIVE
WEAPON SYSTEM, AEGIS, MK-7 MODIFICATIONS	$20,814,497	$22,775,728	-9%	($1,961,230)
GENERAL SPACES	$3,865,093	$6,034,506	-36%	($2,169,413)
COMMUNICATION SYSTEMS, SATELLITE	$3,701,778	$4,652,652	-20%	($950,875)
LAUNCHER SYSTEMS	$4,825,826	$3,426,437	41%	$1,399,389
WEAPON SYSTEM, CLOSE-IN, MK 15 (PHALANX)	$2,822,876	$3,496,662	-19%	($673,786)
CONTROL AND SURVEILLANCE SYSTEM, ENGINEERING PLANT	$1,981,376	$1,889,150	5%	$92,225
INTERCEPT AND ANALYSIS SYSTEMS, SURFACE	$1,500,935	$2,302,716	-35%	($801,782)
FIRE CONTROL SYSTEM, GUN, MK 86	$1,241,119	$1,763,073	-30%	($521,954)
GAS TURBINE MODULE, PROPULSION	$1,539,197	$1,276,453	21%	$262,744
PLANTS, GENERATING, SHIPS SERVICE	$1,333,058	$1,320,594	1%	$12,464

Table 27. FY 2006 Cruiser's Most Costly Systems.

Then we identified the National Item Identification Numbers (NIIN) that accounted for the greatest difference in expenditures from PACFLT to LANTFLT in FY 2006 for those six systems where PACFLT was more expensive than LANTFLT. The following tables include the system NIINs and their nomenclature, unit cost, the demand in each of the respective fleets, and the differences in demand and cost. These differences in the respective fleets are due to greater demand in PACFLT. Additionally, it shows the percentage of system expenditures that each fleet expended for each NIIN. Consider that the cost differences for the NIINs in the following tables are offset by other NIINS in which demand was greater in LANTFLT than PACFLT. Requests for the data, which includes all of the NIINs that were ordered for each system with an extended price over two dollars, should be directed to the SURFOR Comptroller.

1. AEGIS MK-7 Modifications

In the category of AEGIS Weapon System MK-7 Modifications, PACFLT cruisers expended $1,961,230 more on repair parts than LANTFLT cruisers in FY 2006. Table 28 shows electron tubes accounted for $424,920 of the $2 million difference. These 24 electron tubes ordered by PACFLT cruisers accounted for 4.48 percent of their total system expenditures. LANTFLT cruisers ordered 14 electron tubes which accounted for 2.86 percent of their total system expenditures.

Demand Summary:
386 NIINs had a higher demand in PACFLT than in LANTFLT.
42 NIINs had the same demand in both fleets.
369 NIINs had higher demand in LANTFLT than in PACFLT.

FY 2006 AEGIS WEAPON SYSTEM MK-7 MODIFICATIONS								
NOMENCLATURE	NIIN	UNIT COST	PAC DMD	LANT DMD	DMD DIFF	COST DIFF	% OF PAC SYS EXP	% OF LANT SYS EXP
ELECTRON TUBE	013221337	$42,492	24	14	10	$424,920	4.48	2.86
CIRCUIT CARD ASSEMBLY	012604252	$34,489	12	1	11	$379,379	1.82	0.17
CIRCUIT CARD ASSEMBLY	012584223	$3,292	233	119	114	$375,288	3.37	1.88
POWER SUPPLY	014547513	$64,535	6	1	5	$322,675	1.70	0.31
ELECTRON TUBE	013221338	$52,738	14	8	6	$316,428	3.24	2.03
CONVERTER, FREQUENCY	014382596	$24,989	34	22	12	$299,868	3.73	2.64
DEVELOPER, WAVEFORM	012559176	$98,202	3	0	3	$294,606	1.29	0.00
CIRCUIT CARD ASSEMBLY	012584171	$48,554	8	2	6	$291,324	1.71	0.47
POWER SUPPLY	012583674	$60,902	4	0	4	$243,608	1.07	0.00
POWER SUPPLY	012646983	$30,624	10	3	7	$214,368	1.34	0.44

Table 28. FY 2006 AEGIS MK-7 Modifications System.

2. General Spaces

In the category of General Spaces, PACFLT cruisers expended $2,169,413 more than LANTFLT cruisers during FY 2006. Table 29 shows air-engine starters accounted for a $177,250 of the $2.1 million difference. In FY 2006, PACFLT cruisers ordered five air-engine starters which accounted for 4.48 percent of PACFLT total system expenditures, whereas, LANTFLT cruisers did not order any air-engine starters during the fiscal year.

Demand Summary:
486 NIINs had a higher demand in PACFLT than in LANTFLT.
23 NIINs had the same demand in both fleets.
339 NIINs had higher demand in LANTFLT than in PACFLT.

FY 2006 GENERAL SPACES								
NOMENCLATURE	NIIN	UNIT COST	PAC DMD	LANT DMD	DMD DIFF	COST DIFF	% OF PAC SYS EXP	% OF LANT SYS EXP
STARTER, ENGINE, AIR	014971952	$35,450	5	0	-5	$177,250	2.94	0.00
INERTIAL MEASURING	014950012	$168,928	1	0	-1	$168,928	2.80	0.00
VALVE, SOLENOID	012050427	$45,304	3	0	-3	$135,912	2.25	0.00
TRANSFORMER, POWER	012615670	$61,981	2	0	-2	$123,962	2.05	0.00
PWR SUPPLY SUBASS	010466656	$51,316	2	0	-2	$102,632	1.70	0.00
VALVE, REGULATING, F	013097461	$50,344	2	0	-2	$100,688	1.67	0.00
CABLE ASSEMBLY SET	013754567	$43,442	2	0	-2	$86,884	1.44	0.00
ELECTRON TUBE	013221337	$42,492	2	0	-2	$84,984	1.41	0.00
REGULATOR, VOLTAGE	013807594	$82,268	1	0	-1	$82,268	1.36	0.00
GEARBOX, INLET	006026006	$80,886	1	0	-1	$80,886	1.34	0.00

Table 29. FY 2006 General Spaces System.

3. Satellite Communications

In the category of the Satellite Communications System, PACFLT cruisers expended $950,875 more than LANTFLT cruisers during FY 2006. Table 30 shows the modem assembly accounted for $374,348 of the $950,000 difference. In FY 2006, PACFLT cruisers ordered four more modem assemblies than LANTFLT cruisers which accounted for 8.05 percent of the total system expenditures for PACFLT cruisers. On the other hand, LANTFLT cruisers did not order any modem assemblies during the fiscal year.

Demand Summary:
61 NIINs had a higher demand in PACFLT than in LANTFLT.
14 NIINs had the same demand in both fleets.
56 NIINs had higher demand in LANTFLT than in PACFLT.

FY 2006 SATELLITE COMMUNICATIONS SYSTEM								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
MODEM ASSEMBLY, COMM	014814599	$93,587	4	0	-4	$374,348	8.05	0.00
CIRCUIT CARD ASSEMBLY	014808485	$19,871	15	4	-11	$218,581	6.41	2.15
DISPLAY UNIT	015192216	$68,063	3	0	-3	$204,189	4.39	0.00
SENSOR ASSEMBLY	014962599	$31,811	11	5	-6	$190,866	7.52	4.30
CONVERTER, SIGNAL	014711431	$59,200	3	1	-2	$118,400	3.82	1.60
CIRCUIT CARD ASSEMBLY	015093000	$92,698	1	0	-1	$92,698	1.99	0.00
AMPLIFIER, RADIO FREQ	014827596	$79,194	18	17	-1	$79,194	30.64	36.37
CIRCUIT CARD ASSEMBLY	015089512	$56,011	1	0	-1	$56,011	1.20	0.00
CIRCUIT CARD ASSEMBLY	012976249	$48,571	1	0	-1	$48,571	1.04	0.00
CIRCUIT CARD ASSEMBLY	014827508	$5,328	12	3	-9	$47,952	1.37	0.43

Table 30. FY 2006 Satellite Communications System.

4. Launcher

In the category of Launcher Systems, LANTFLT cruisers expended $1,399,389 more than PACFLT cruisers during FY 2006. Table 31 shows in FY 2006 LANTFLT cruisers ordered 29 more marine hatches than PACFLT cruisers accounting for 29.79 percent of the total Launcher system expenditures for LANTFLT cruisers. PACFLT cruisers did not order any marine hatches during the fiscal year.

Demand Summary:
62 NIINs had a higher demand in PACFLT than in LANTFLT.
6 NIINs had the same demand in both fleets.
52 NIINs had higher demand in LANTFLT than in PACFLT.

FY 2006 LAUNCHER SYSTEM								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
HATCH, MARINE	013455961	$49,574	0	29	29	$1,437,646	0.00	29.79
CABLE AND CONDUIT AS	012740813	$13,291	3	18	15	$199,365	1.16	4.96
REGULATOR, VOLTAGE	012719765	$86,844	2	4	2	$173,688	5.07	7.20
CABLE AND CONDUIT AS	012719775	$12,887	0	12	12	$154,644	0.00	3.20
CIRCUIT CARD ASSEMBLY	013883268	$29,817	7	12	5	$149,085	6.09	7.41
ELECTRONIC COMPONENT	012833414	$20,215	4	9	5	$101,075	2.36	3.77
RELAY ASSEMBLY	013769890	$98,724	0	1	1	$98,724	0.00	2.05
MOTOR, DIRECT CURRENT	012740617	$8,528	8	11	3	$25,584	1.99	1.94
VALVE, REGULATING, F	013237253	$8,054	1	4	3	$24,162	0.24	0.67
CABLE AND CONDUIT AS	012979615	$23,314	0	1	1	$23,314	0.00	0.48

Table 31. FY 2006 Launcher System.

5. MK-15 Close-in Weapon

In the category of the MK15 Close-In Weapon System, PACFLT cruisers expended $673,786 more than LANTFLT cruisers during FY 2006. Table 32 shows the gun barrel accounted for $200,681 of the $673,000 difference. In FY 2006, PACFLT cruisers ordered 43 more gun barrels than LANTFLT cruisers which accounted for 5.74 percent of the total MK-15 system expenditures for PACFLT cruisers. On the other hand, LANTFLT cruisers did not order any gun barrels during the fiscal year.

Demand Summary:
93 NIINs had a higher demand in PACFLT than in LANTFLT.
17 NIINs had the same demand in both fleets.
56 NIINs had higher demand in LANTFLT than in PACFLT.

FY 2006 MK-15 CLOSE-IN WEAPON SYSTEM								
NOMENCLATURE	NIIN	UNIT COST	PAC DMD	LANT DMD	DMD DIFF	COST DIFF	% OF PAC SYS EXP	% OF LANT SYS EXP
BARREL, AUTO GUN	013568483	$4,667	43	0	-43	$200,681	5.74	0.00
ELECTRONIC COMPON	012307994	$85,415	2	0	-2	$170,830	4.89	0.00
MIXER, ASSEMBLY	012308079	$44,263	3	0	-3	$132,789	3.80	0.00
LOADER, AMMUNITION	012230806	$60,483	3	1	-2	$120,966	5.19	2.14
POWER SUPPLY	012475817	$37,176	3	0	-3	$111,528	3.19	0.00
ENTRANC UNT ASSEMBLY	012307383	$31,291	4	1	-3	$93,873	3.58	1.11
TANK, AIR, HIGH PRESS	012813122	$87,456	1	0	-1	$87,456	2.50	0.00
CIRCUIT CARD ASSEMBLY	012335932	$42,841	2	0	-2	$85,682	2.45	0.00
AIR DRYER, ASSEMBLY	011979828	$16,691	12	7	-5	$83,455	5.73	4.14
CONVEYOR, AMMO	013731844	$77,444	1	0	-1	$77,444	2.21	0.00

Table 32. FY 2006 MK-15 Close-In Weapon System.

6. Engineering Plant Control and Surveillance

In the category of the Control and Surveillance System Engineering Plant, LANTFLT cruisers expended $92,225 more than PACFLT cruisers during FY 2006. Table 33 shows the electronic component accounted for $62,016 of the $92,000 difference. In FY 2006, LANTFLT cruisers ordered three more of these electronic components than PACFLT cruisers which accounted for 4.17 percent of the total Engineering Plant Control and Surveillance system expenditures for LANTFLT cruisers. PACFLT cruisers only ordered one of these electronic components which accounted for 1.09 percent of their total system expenditures.

Demand Summary:
82 NIINs had a higher demand in PACFLT than in LANTFLT.
16 NIINs had the same demand in both fleets.
88 NIINs had higher demand in LANTFLT than in PACFLT.

FY 2006 CONTROL AND SURVEILLANCE SYSTEM ENGINEERING PLANT								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
ELECTRONIC COMPONENT	013101482	$20,672	1	4	3	$62,016	1.09	4.17
CONTROL UNIT, PLA	010581747	$29,707	0	2	2	$59,414	0.00	3.00
DISPLAY UNIT	014715672	$28,785	0	2	2	$57,570	0.00	2.91
CONTROL, ALTITUDE, AU	013113237	$51,240	0	1	1	$51,240	0.00	2.59
ELECTRONIC COMPONENT	013101485	$25,601	1	3	2	$51,202	1.36	3.88
ELECTRONIC COMPONENT	015275621	$15,499	0	3	3	$46,497	0.00	2.35
CIRCUIT CARD ASSEMBLY	011349756	$9,050	17	22	5	$45,250	8.14	10.05
TERMINAL, DATA PROCESS	015216927	$40,387	1	2	1	$40,387	2.14	4.08
CIRCUIT CARD ASSEMBLY	011349739	$9,370	20	24	4	$37,480	9.92	11.35
CIRCUIT CARD ASSEMBLY	012272762	$8,715	0	4	4	$34,860	0.00	1.76

Table 33. FY 2006 Control & Surveillance System Engineering Plant System.

7. Surface Intercept and Analysis

In the category of the Surface Intercept and Analysis System, PACFLT cruisers expended $801,782 more than LANTFLT cruisers during FY 2006. Table 34 shows the electron tube accounted for $733,623 of the $801,781 difference. In FY 2006, PACFLT cruisers ordered 121 more electron tubes than LANTFLT cruisers which accounted for 36.07 percent of the total system expenditures for PACFLT cruisers. On the other hand, LANTFLT cruisers ordered 16 electron tubes which accounted for 6.46 percent of their total system expenditures.

Demand Summary:
40 NIINs had a higher demand in PACFLT than in LANTFLT.
12 NIINs had the same demand in both fleets.
50 NIINs had higher demand in LANTFLT than in PACFLT.

FY 2006 SURFACE INTERCEPT AND ANALYSIS SYSTEM								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
ELECTRON TUBE	011577009	$6,063	137	16	-121	$733,623	36.07	6.46
DISTRIBUTION UNIT, HI	011495464	$17,178	12	0	-12	$206,136	8.95	0.00
DRIVER, TRAINING WA	011663994	$8,226	10	1	-9	$74,034	3.57	0.55
TUNER, RADIO FREQ	014965962	$32,689	5	3	-2	$65,378	7.10	6.53
EXTENDER CARD, ELEC	014967026	$60,415	1	0	-1	$60,415	2.62	0.00
PANEL, INDICATOR	014983058	$22,369	2	0	-2	$44,738	1.94	0.00
ANTENNA	014969514	$36,018	1	0	-1	$36,018	1.56	0.00
DIGITIZER, VOICE	014993617	$33,962	1	0	-1	$33,962	1.47	0.00
TWT AMPLIFIER	011643203	$32,382	1	0	-1	$32,382	1.41	0.00
OSCILLATOR SUBASSE	014966977	$31,243	1	0	-1	$31,243	1.36	0.00

Table 34. FY 2006 Surface Intercept & Analysis System.

8. MK- 86 Fire Control

With regards to the MK86 Fire Control System, PACFLT cruisers expended $521,954 more than LANTFLT cruisers in FY 2006 Table 35 shows the television camera accounted for $247,168 of the $521,000 difference. In FY 2006, PACFLT cruisers ordered 4 more television cameras than LANTFLT cruisers which accounted for 28.04 percent of the total MK-86 system expenditures for PACFLT cruisers. LANTFLT cruisers ordered 4 television cameras which accounted for 19.91 percent of their total system expenditures.

Demand Summary:
43 NIINs had a higher demand in PACFLT than in LANTFLT.
3 NIINs had the same demand in both fleets.
49 NIINs had higher demand in LANTFLT than in PACFLT.

FY 2006 MK-86 FIRE CONTROL SYSTEM								
NOMENCLATURE	NIIN	UNIT COST	PAC DMD	LANT DMD	DMD DIFF	COST DIFF	% OF PAC SYS EXP	% OF LANT SYS EXP
CAMERA, TELEVISION	014541736	$61,792	8	4	-4	$247,168	28.04	19.91
ELECTRONIC COMPONENT	011565984	$90,001	2	0	-2	$180,002	10.21	0.00
ELECTRON TUBE	004502229	$57,373	3	1	-2	$114,746	9.76	4.62
MONITOR, TELEVISION	010865274	$51,772	6	4	-2	$103,544	17.62	16.69
CAMERA, TELEVISION	014257901	$88,119	1	0	-1	$88,119	5.00	0.00
SLIP RING ASSEMBLY	010277002	$46,524	1	0	-1	$46,524	2.64	0.00
RADAR SET SUBASSEMBLY	001930596	$5,851	6	1	-5	$29,255	1.99	0.47
SERVO REPEATER	004344920	$9,535	4	1	-3	$28,605	2.16	0.77
AMPLIFIER, RADIO FREQ	004336499	$9,671	3	1	-2	$19,342	1.65	0.78
RADAR SET SUBASSEMBLY	002202895	$2,699	6	0	-6	$16,194	0.92	0.00

Table 35. FY 2006 MK-86 Fire Control System.

The following systems were more costly in LANTFLT than PACFLT in FY 2006. This was due to greater demand in LANTFLT. Consider that the cost differences for the NIINs in the following tables are offset by other NIINS in which demand was greater in PACFLT than LANTFLT.

9. Gas Turbine Propulsion

In the category of the Gas Turbine Propulsion System, LANTFLT cruisers expended $262,744 more than PACFLT cruisers during FY 2006. Table 36 shows in FY 2006 LANTFLT cruisers ordered 7 more screen assemblies than PACFLT cruisers which accounted for 21.36 percent of the total Gas Turbine Propulsion system expenditures for LANTFLT cruisers. PACFLT cruisers did not order any screen assemblies during the fiscal year.

Demand Summary:
54 NIINs had a higher demand in PACFLT than in LANTFLT.
9 NIINs had the same demand in both fleets.
58 NIINs had higher demand in LANTFLT than in PACFLT.

FY 2006 GAS TURBINE PROPULSION								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
SCREEN ASSEMBLY, GAS	010066270	$46,978	0	7	7	$328,846	0.00	21.36
STARTER, ENGINE, AIR	013608581	$86,886	3	4	1	$86,886	20.42	22.58
STARTER, ENGINE, AIR	012057064	$22,384	0	2	2	$44,768	0.00	2.91
SEPARATOR, AIR AND O	006011025	$39,254	0	1	1	$39,254	0.00	2.55
DUCT, INLET	006102818	$16,245	0	2	2	$32,489	0.00	2.11
VALVE, REGULATING, F	006178058	$10,578	1	4	3	$31,734	0.83	2.75
ACTUATOR, POWER LEVE	010931372	$7,670	0	4	4	$30,680	0.00	1.99
PUMP, ROTARY	006137243	$29,198	2	3	1	$29,198	4.57	5.69
PUMP, RECIPROCATING	013877661	$13,047	0	2	2	$26,094	0.00	1.70
ACTUATOR ASSEMBLY	011368496	$3,971	0	3	3	$11,913	0.00	0.77

Table 36. FY 2006 Gas Turbine Propulsion System.

10. Ship Service Generating Plants

In the category of Ship Service Generating Plants, LANTFLT cruisers expended $12,464 more than PACFLT cruisers during FY 2006. Table 37 shows in FY 2006 LANTFLT cruisers ordered eight more starters than PACFLT cruisers which accounted for 16.3 percent of the total system expenditures. This difference in demand resulted in a $193,120 cost difference between the two fleets. PACFLT cruisers only ordered one starter during the fiscal year which accounted for 1.83 percent of PACFLT total system expenditures.

Demand Summary:
61 NIINs had a higher demand in PACFLT than in LANTFLT.
6 NIINs had the same demand in both fleets.
46 NIINs had higher demand in LANTFLT than in PACFLT.

FY 2006 SHIP SERVICE GENERATING PLANTS								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
AIR TURBINE STARTER	012858138	$24,140	1	9	8	$193,120	1.83	16.30
ACCY DRIVE UNIT	010317639	$45,376	2	5	3	$136,128	6.87	17.02
PUMP, ROTARY	006543617	$16,308	0	4	4	$65,232	0.00	4.89
COMPRESSOR UNIT, ROT	011916337	$25,524	0	1	1	$25,524	0.00	1.91
VALVE, FLOW CONTROL	014851393	$22,681	0	1	1	$22,681	0.00	1.70
CIRCUIT CARD ASSEMBLY	011678562	$21,409	1	2	1	$21,409	1.62	3.21
VALVE, REGULATING, FL	012330571	$5,844	1	4	3	$17,532	0.44	1.75
VALVE ASSEMBLY	008769685	$15,966	2	3	1	$15,966	2.42	3.59
VALVE, SOLENOID	013299819	$14,407	0	1	1	$14,407	0.00	1.08
METER, PANEL, CONTROL	011413555	$14,108	0	1	1	$14,108	0.00	1.06

Table 37. FY 2006 Ship Service Generating Plants System.

D. SYSTEMS FY 2007

First, we identified the systems that required the most expenditures in FY 2007 and they are displayed in Table 38. It shows the nomenclature of the system and how much each fleet expended on the system. Additionally, it shows how much more or less expensive LANTFLT was to PACFLT in terms of dollars and percent.

FY 2007 CRUISERS' MOST COSTLY SYSTEMS				
SYSTEM	LANTFLT	PACFLT	LANT PERCENT MORE/(LESS) EXPENSIVE	LANT MORE/(LESS) EXPENSIVE
WEAPON SYSTEM, AEGIS, MK-7 MODIFICATIONS	$11,526,058	$13,671,629	-16%	($2,145,571)
COMMUNICATION SYSTEMS, SATELLITE	$1,282,613	$2,124,511	-40%	($841,898)
COLLISION AVOIDANCE AND NAVIGATION SYSTEMS	$1,532,014	$1,736,920	-12%	($204,906)
INTERCEPT AND ANALYSIS SYSTEMS, SURFACE	$811,051	$1,666,115	-51%	($855,064)
WEAPON SYSTEM, CLOSE-IN, MK 15 (PHALANX)	$949,687	$1,512,226	-37%	($562,539)
LAUNCHER SYSTEMS	$855,355	$1,454,675	-41%	($599,320)
GAS TURBINE MODULE, PROPULSION	$894,073	$1,075,710	-17%	($181,637)
FIREMAINS, FLS, SPKLR, WASHDOWN AND SALT WATER SER. SYS.	$636,986	$1,283,588	-50%	($646,602)
CONTROL AND SURVEILLANCE SYSTEM, ENGINEERING PLANT	$601,535	$1,291,830	-53%	($690,296)
STOREROOMS AND STOWAGE LOCKERS FOR EQUIPMENT/EQUIPAGE	$219,100	$1,053,753	-79%	($834,653)

Table 38. FY 2007 Cruisers' Most Costly Systems.

Then we identified the NIINs that accounted for the greatest difference in expenditures from PACFLT to LANTFLT in FY 2007 for those ten systems where PACFLT was more expensive than LANTFLT. The following tables include the system NIINs and their nomenclature, unit cost, the demand in each of the respective fleets, and the differences in demand and cost. These differences are due to greater demand in PACFLT. Additionally, it shows the percentage of system expenditures that each fleet expended for each NIIN. Consider that the cost differences for the NIINs in the following tables are offset by other NIINS in which demand was greater in LANTFLT than PACFLT.

1. AEGIS MK-7Modifications

In the category of AEGIS Weapon System MK-7 Modifications, PACFLT cruisers expended $2,145,571 more on repair parts than LANTFLT cruisers in FY 2007. Table 39 shows the frequency multiplier accounted for $180,750 of the $2.1 million difference. In FY 2007 PACFLT cruisers ordered three more frequency multipliers which accounted for 1.32 percent of their total MK-7 system expenditures. LANTFLT cruisers did not order any frequency multipliers during the fiscal year.

Demand Summary:
1044 NIINs had a higher demand in PACFLT than in LANTFLT
105 NIINs had the same demand in both fleets
727 NIINs had higher demand in LANTFLT than in PACFLT

FY 2007 AEGIS WEAPON SYSTEM MK-7 MODIFICATIONS								
NOMENCLATURE	NIIN	UNIT COST	PAC DMD	LANT DMD	DMD DIFF	COST DIFF	% OF PAC SYS EXP	% OF LANT SYS EXP
FREQUENCY MULTIPLIE	012559717	$60,250	3	0	3	$180,750	1.32	0.00
ELECTRON TUBE	013926982	$2,639	332	269	63	$166,257	6.41	6.16
CIRCUIT CARD ASSEMBLY	012666363	$18,634	8	0	8	$149,072	1.09	0.00
CONVERTER, FREQUENCY	012624362	$49,342	3	0	3	$148,026	1.08	0.00
TRANSFORMER, POWER	012615670	$61,981	3	1	2	$123,962	1.36	0.54
FILTER ASSEMBLY,ELE	012647273	$8,120	15	0	15	$121,800	0.89	0.00
CIRCUIT CARD ASSEMBLY	012559120	$27,829	4	0	4	$111,316	0.81	0.00
CIRCUIT CARD ASSEMBLY	012584223	$2,648	110	70	40	$105,920	2.13	1.61
ELECTRON TUBE	013221265	$84,297	1	0	1	$84,297	0.62	0.00
GENERATOR, DOPPLER, L	012559145	$42,042	2	0	2	$84,084	0.62	0.00

Table 39. FY 2007 AEGIS MK-7 Modifications System.

2. Satellite Communications

In the category of the Satellite Communications System, PACFLT cruisers expended $841,898 more than LANTFLT cruisers during FY 2007. Table 40 shows radio frequency amplifiers accounted for $643,752 of the $841,000 difference. In FY

2007, PACFLT cruisers ordered four more amplifiers than LANTFLT which accounted for 30 percent of their total Satellite Communications system expenditures. LANTFLT cruisers did not order any of these amplifiers during the fiscal year.

Demand Summary:
135 NIINs had a higher demand in PACFLT than in LANTFLT
14 NIINs had the same demand in both fleets
100 NIINs had higher demand in LANTFLT than in PACFLT

FY 2007 SATELLITE COMMUNICATIONS SYSTEM								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
AMPLIFIER,RADIO FREQUENCY	012913075	$160,938	4	0	4	$643,752	30.30	0.00
DRIVE,ANTENNA	014692465	$6,070	19	7	12	$72,840	5.43	3.31
TRANSMITTER	011144422	$2,654	21	6	15	$39,810	2.62	1.24
PANEL,POWER DISTRIB	015149267	$39,200	2	1	1	$39,200	3.69	3.06
AMPLIFIER,RADIO FREQUENCY	014827596	$16,761	15	13	2	$33,522	11.83	16.99
CIRCUIT CARD ASSEMBLY	015436611	$11,003	3	0	3	$33,009	1.55	0.00
ANTENNA	015312123	$27,297	1	0	1	$27,297	1.28	0.00
SYNTHESIZER	011144423	$5,517	4	1	3	$16,551	1.04	0.43
BATTERY ASSEMBLY	013244693	$16,078	1	0	1	$16,078	0.76	0.00
RING ASSEMBLY,ELECT	015232770	$14,713	1	0	1	$14,713	0.69	0.00

Table 40. FY 2007 Satellite Communications System.

3. Collision Avoidance

In the category of the Collision Avoidance System, PACFLT cruisers expended $204,906 more than LANTFLT cruisers during FY 2007. Table 41 shows in FY 2007, PACFLT cruisers ordered two more inertial measuring systems than LANTFLT cruisers which accounted for 48.63 percent of their total system expenditures. On the other hand, LANTFLT cruisers ordered three inertial measuring systems which accounted for 33.08 percent of their total Collision Avoidance system expenditures during the fiscal year.

Demand Summary:
35 NIINs had a higher demand in PACFLT than in LANTFLT
5 NIINs had the same demand in both fleets
12 NIINs had higher demand in LANTFLT than in PACFLT

FY 2007 COLLISION AVOIDANCE SYSTEM								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
INERTIAL MEASURING	014950012	$168,928	5	3	2	$337,856	48.63	33.08
GYRO,RING LASER	014708736	$44,596	3	1	2	$89,192	7.70	2.91
BATTERY ASSEMBLY	014708756	$5,292	10	4	6	$31,752	3.05	1.38
CIRCUIT CARD ASSEMBLY	014708750	$9,231	3	0	3	$27,693	1.59	0.00
AMPLIFIER, ELECTRONIC	014661158	$8,267	2	0	2	$16,534	0.95	0.00
POWER SUPPLY	014411150	$7,858	2	0	2	$15,716	0.90	0.00
CIRCUIT CARD ASSEMBLY	014708738	$12,123	1	0	1	$12,123	0.70	0.00
TERMINAL, DATA PROCESSOR	014708744	$3,871	4	1	3	$11,613	0.89	0.25
DISPLAY UNIT	013586244	$7,049	1	0	1	$7,049	0.41	0.00
CIRCUIT CARD ASSEMBLY	014655370	$2,241	3	0	3	$6,723	0.39	0.00

Table 41. FY 2007 Collision Avoidance System.

4. Surface Intercept and Analysis

In the category of the Surface Intercept and Analysis System, PACFLT cruisers expended $855,064 more than LANTFLT cruisers during FY 2007. Table 42 shows the electron tube accounted for $212,400 of the $855,000 difference. In FY 2007, PACFLT cruisers ordered fifty-nine more electronic tubes than LANTFLT cruisers which accounted for 25.28 percent of their total Surface and Intercept and Analysis system expenditures. LANTFLT cruisers ordered fifty-eight electron tubes which accounted for 25.74 percent of their total system expenditures.

Demand Summary:
154 NIINs had a higher demand in PACFLT than in LANTFLT
14 NIINs had the same demand in both fleets
67 NIINs had higher demand in LANTFLT than in PACFLT

FY 2007 SURFACE INTERCEPT & ANALYSIS SYSTEM								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
ELECTRONIC TUBE	011577009	$3,600	117	58	59	$212,400	25.28	25.74
TUNER,RADIO FREQUEN	014965962	$12,555	17	9	8	$100,440	12.81	13.93
TUNER,RADIO FREQUEN	015134642	$15,598	6	0	6	$93,588	5.62	0.00
INTERFACE UNIT,COMM	014983061	$66,313	1	0	1	$66,313	3.98	0.00
CIRCUIT CARD ASSEMB	014965937	$11,465	4	0	4	$45,860	2.75	0.00
BASE,ANTENNA SUPPOR	012932450	$18,189	2	0	2	$36,378	2.18	0.00
CONVERTER,FREQUENCY	015396506	$17,150	2	0	2	$34,300	2.06	0.00
RECEIVER,RADIO	014955021	$16,322	3	1	2	$32,644	2.94	2.01
TWT AMPLIFIER	011643203	$7,731	3	0	3	$23,193	1.39	0.00
FILTER,BAND SUPPRES	013800657	$11,162	2	0	2	$22,324	1.34	0.00

Table 42. FY 2007 Surface Intercept & Analysis System.

5. MK-15 Close-In Weapon

In the category of the MK15 Close-In Weapon System, PACFLT cruisers expended $562,539 more than LANTFLT cruisers during FY 2007. Table 43 shows the computer assembly accounted for $68,526 of the $562,000 difference. In FY 2007 PACFLT cruisers ordered three more computer assemblies which accounted for 5.0 percent of their total MK-15 system expenditures. LANTFLT cruisers did not order any computer assemblies during the fiscal year.

Demand Summary:
424 NIINs had a higher demand in PACFLT than in LANTFLT
24 NIINs had the same demand in both fleets
134 NIINs had higher demand in LANTFLT than in PACFLT

FY 2007 MK-15 CLOSE-IN WEAPON SYSTEM								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
COMPUTER ASSEMBLY	012219456	$27,221	3	0	3	$81,663	5.40	0.00
PUMP UNIT, CENTRIFUG	013622973	$7,614	14	5	9	$68,526	7.05	4.01
AMPLIFIER, AUDIO FRE	013173676	$65,510	2	1	1	$65,510	8.66	6.90
AMPLIFIER, AUDIO FRE	014314290	$65,510	1	0	1	$65,510	4.33	0.00
AIR DRYER ASSEMBLY	011979828	$5,948	20	9	11	$65,428	7.87	5.64
DRIVE UNIT, HYDRAULI	012308191	$47,158	1	0	1	$47,158	3.12	0.00
CABLE ASSEMBLY, POWER	012307605	$29,984	1	0	1	$29,984	1.98	0.00
BARREL,AUTOMAT IC GU	013568483	$4,667	7	1	6	$28,002	2.16	0.49
MODULATOR	012308080	$26,807	1	0	1	$26,807	1.77	0.00
MOTOR,DIRECT CURREN	011572436	$3,556	7	0	7	$24,892	1.65	0.00

Table 43. FY 2007 MK-15 Close-In Weapon System.

6. Launcher

In the category of Launcher Systems, PACFLT cruisers expended $599,320 more than LANTFLT cruisers during FY 2007. Table 44 shows electronic generators accounted for $145,398 of the $599,000 difference. In FY 2007, PACFLT cruisers ordered three more generators than LANTFLT cruisers which accounted for 13.33 percent of their total Launcher system expenditures. LANTFLT cruisers only ordered one electronic generator which accounted for 5.67 percent of their total system expenditures for the fiscal year.

Demand Summary:
216 NIINs had a higher demand in PACFLT than in LANTFLT
16 NIINs had the same demand in both fleets
107 NIINs had higher demand in LANTFLT than in PACFLT

FY 2007 LAUNCHER SYSTEM								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
GENERATOR, ELECTRONIC	012706316	$48,466	4	1	3	$145,398	13.33	5.67
POWER SUPPLY	012719707	$19,143	5	0	5	$95,715	6.58	0.00
CABLE AND CONDUIT A	012740813	$6,133	16	4	12	$73,596	6.75	2.87
PANEL, POWER DISTRIBUTION	012719746	$61,823	1	0	1	$61,823	4.25	0.00
PANEL, POWER DISTRIBUTION	014196948	$61,823	1	0	1	$61,823	4.25	0.00
FAN,VANEAXIAL	012719653	$4,672	10	3	7	$32,704	3.21	1.64
CIRCUIT CARD ASSEMBLY	012926617	$1,852	13	1	12	$22,224	1.66	0.22
CIRCUIT CARD ASSEMBLY	013883268	$2,403	17	10	7	$16,821	2.81	2.81
CABLE AND CONDUIT A	012883485	$4,340	3	0	3	$13,020	0.90	0.00
COUPLING HALF, QUICK	013031139	$1,099	12	1	11	$12,089	0.91	0.13

Table 44. FY 2007 Launcher System.

7. Gas Turbine Module Propulsion

In the category of the Gas Turbine Module Propulsion System, PACFLT cruisers expended $181,637 more than LANTFLT cruisers during FY 2007. Table 45 shows the gear box assembly accounted for $120,376 of the $181,000 difference. In FY 2007, PACFLT cruisers ordered one more gearbox assembly than LANTFLT which accounted for 11.19 percent of their total Gas Turbine Module Propulsion system expenditures for the fiscal year. LANTFLT cruisers did not order any gearbox assemblies during the fiscal year.

Demand Summary:
272 NIINs had a higher demand in PACFLT than in LANTFLT
21 NIINs had the same demand in both fleets
245 NIINs had higher demand in LANTFLT than in PACFLT

FY 2007 GAS TURBINE MODULE PROPULSION SYSTEM								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
GEARBOX ASSEMBLY	011010018	$120,376	1	0	1	$120,376	11.19	0.00
MAIN FUEL CONTROL	012394886	$26,457	5	3	2	$52,914	12.30	8.88
TUBE, GAS TURBINE	006027026	$1,176	31	0	31	$36,444	3.39	0.00
THERMOCOUPLE,TOP	005966273	$11,535	4	1	3	$34,605	4.29	1.29
ACTUATORZPOWERZLEVE	014818695	$6,630	4	0	4	$26,520	2.47	0.00
TRANSDUCER,GAS TURBINE	006028050	$11,732	3	1	2	$23,464	3.27	1.31
ACTUATOR,POWER LEVE	014610681	$6,801	4	1	3	$20,403	2.53	0.76
FIXTURE, TRANSFER	010782084	$19,103	1	0	1	$19,103	1.78	0.00
ACTUATOR,POWER LEVE	010931372	$6,170	3	0	3	$18,510	1.72	0.00
STARTER, PNEUMATIC	010603140	$17,300	1	0	1	$17,300	1.61	0.00

Table 45. FY 2007 Gas Turbine Module Propulsion System.

8. Firemains FLS, Sprinklers, Saltwater Washdown Service

In the category of the Firemain System, PACFLT cruisers expended $646,602 more than LANTFLT cruisers during FY 2007. Table 46 shows the sediment strainer accounted for $64,903 of the $646,000 difference. In FY 2007, PACFLT cruisers ordered two more sediment strainers than LANTFLT cruisers accounting for 5.06 percent of their total Firemains, Sprinklers, Saltwater Washdown Service system expenditures. LANTFLT cruisers did not order any of these strainers during the fiscal year.

Demand Summary:
457 NIINs had a higher demand in PACFLT than in LANTFLT
42 NIINs had the same demand in both fleets
282 NIINs had higher demand in LANTFLT than in PACFLT

FY 2007 FIREMAINS, FLS, SPRINKLER, SALT WATER WASHDOWN & SERVICE SYSTEM								
NOMENCLATURE	NIIN	UNIT COST	PAC DMD	LANT DMD	DMD DIFF	COST DIFF	% OF PAC SYS EXP	% OF LANT SYS EXP
STRAINER, SEDIMENT	013928698	$32,452	2	0	2	$64,903	5.06	0.00
VALVE,GLOBE	011165917	$3,435	10	0	10	$34,350	2.68	0.00
VALVE,GLOBE	004357990	$10,706	3	0	3	$32,118	2.50	0.00
VALVE,GLOBE	011469853	$4,864	8	2	6	$29,187	3.03	1.53
VALVE,SOLENOID	011388937	$5,813	12	7	5	$29,066	5.43	6.39
VALVE,SAFETY RELIEF	011871976	$5,824	4	0	4	$23,294	1.81	0.00
VALVE,GLOBE	012522552	$11,281	2	0	2	$22,562	1.76	0.00
STRAINER, SEDIMENT	013925400	$21,654	1	0	1	$21,654	1.69	0.00
VALVE,PILOT CONTROL	002566642	$451	65	17	48	$21,627	2.28	1.20
VALVE,GLOBE	012360567	$19,384	1	0	1	$19,384	1.51	0.00

Table 46. FY 2007 Firemains, ELS, Sprinkler, Salt Water Washdown & Service System.

9. Engineering Plant Control and Surveillance

In the category of the Control and Surveillance System, PACFLT cruisers expended $690,296 more than LANTFLT cruisers during FY 2007. Table 47 shows the electronic teleprinters accounted for $110,904 of the $690,000 difference. In FY 2007, PACFLT cruisers ordered two more electronic teleprinters than LANTFLT cruisers which accounted for 8.59 percent of their total Engineering Plant Control and Surveillance system expenditures. LANTFLT cruisers did not order any of these electronic teleprinters during the fiscal year.

Demand Summary:
238 NIINs had a higher demand in PACFLT than in LANTFLT
11 NIINs had the same demand in both fleets
130 NIINs had higher demand in LANTFLT than in PACFLT

FY 2007 CONTROL & SURVEILLANCE SYSTEM, ENGINEERING PLANT SYSTEM								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
TELEPRINTER,ELECTRO	013649639	$55,452	2	0	2	$110,904	8.59	0.00
TELEPRINTER,ELECTRO	011372099	$45,274	2	0	2	$90,548	7.01	0.00
PANEL,MONITOR	015327456	$13,195	6	0	6	$79,170	6.13	0.00
CIRCUIT CARD ASSEMB	011349756	$4,586	19	9	10	$45,860	6.75	6.86
LEVER,MANUAL CONTRO	012759172	$29,774	1	0	1	$29,774	2.30	0.00
CIRCUIT CARD ASSEMB	010395592	$993	38	14	24	$23,832	2.92	2.31
ELECTRONIC COMPONEN	010761346GL	$1,358	19	2	17	$23,086	2.00	0.45
POWER SUPPLY ASSEMB	014419647	$22,406	1	0	1	$22,406	1.73	0.00
POWER SUPPLY ASSEMB	014419656	$22,406	1	0	1	$22,406	1.73	0.00
CIRCUIT CARD ASSEMB	014715780	$5,596	7	3	4	$22,384	3.03	2.79

Table 47. FY 2007 Engineering Plant Control and Surveillance System.

10. Storerooms and Stowage Lockers

In the category of the Storerooms and Stowage Lockers Equipage System, PACFLT cruisers expended $834,653 more than LANTFLT cruisers during FY 2007. Table 48 shows breathing apparatus accounted for $189,720 of the $834,000 difference. In FY 2007 PACFLT cruisers ordered 558 more breathing apparatus which accounted for 18.33 percent of their total Storerooms and Stowage Lockers system expenditures. LANTFLT cruisers only ordered 10 breathing apparatus which accounted for 1.55 of their total system expenditures during the fiscal year.

Demand Summary:
579 NIINs had a higher demand in PACFLT than in LANTFLT
25 NIINs had the same demand in both fleets
178 NIINs had higher demand in LANTFLT than in PACFLT

FY 2007 STOREROOMS & STOWAGE LOCKERS EQUIPAGE SYSTEM								
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**DMD DIFF**	**COST DIFF**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
BREATHING APPARATUS	014395937	$340	568	10	558	$189,720	18.33	1.55
THERMAL IMAGING SYS	014935907	$17,902	5	0	5	$89,510	8.49	0.00
REDUCER,PRESSURE,RE	012509073	$900	59	3	56	$50,424	5.04	1.23
FAN,VANEAXIAL	013332224	$5,792	9	1	8	$46,336	4.95	2.64
BREATHING APPARATUS	014861946	$2,412	11	0	11	$26,532	2.52	0.00
GEAR,FIRE PROTECTIV	014685565	$1,118	22	2	20	$22,362	2.33	1.02
FOAM LIQUID, FIRE EX	010568343	$43	441	4	437	$18,612	1.78	0.08
IMAGE INTENSIFIER,N	013527033E2	$17,841	1	0	1	$17,841	1.69	0.00
AIR CYL AND VALVE ASS	014496416	$1,774	10	0	10	$17,744	1.68	0.00
VALVE ASSEMBLY	013536307	$16,753	1	0	1	$16,753	1.59	0.00

Table 48. FY 2007 Storerooms & Stowage Lockers Equipage System.

E. SYSTEM ANOMALIES

When analyzing the NIINs for the 10 costliest systems, we established criteria for anomalies that consisted of a unit price of at least $5,000, a total quantity demand equal to or greater than 50, and at least one percent of the total system expenditures for both fleets. Any NIIN that met two of the three criteria would be classified as an anomaly.

1. AEGIS MK-7 Modifications

In FY 2006, 11 NIINs for the MK-7 system met our anomaly criteria. These 11 NIINs accounted for 39.52 percent of the total MK-7 system expenditures for PACFLT cruisers and 38.75 percent of the total MK-7 system expenditures for LANTFLT cruisers and are shown in Table 49.

FY 2006 ANOMALIES FOR AEGIS MK-7MODIFICATIONS						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
ELECTRON TUBE*	013221337	$42,492	24	14	2.86	4.48
CIRCUIT CARD ASSEMBLY*	012584223	$3,292	233	119	1.88	3.37
ELECTRON TUBE	013221338	$52,738	14	8	2.03	3.24
CONVERTER, FREQUENCY	014382596	$24,989	34	22	2.64	3.73
ELECTRON TUBE*	013926982	$4,728	271	242	5.50	5.63
REGULATOR, VOLTAGE	013726234	$64,513	17	16	4.96	4.82
ELECTRON TUBE*	013228417	$52,738	10	10	2.53	2.32
RECTIFIER, METALLIC	014820428	$23,172	10	11	1.22	1.02
INVERTER, POWER, STAT*	014657498	$75,209	6	9	3.25	1.98
REGULATOR, VOLTAGE	012660536	$64,513	8	13	4.03	2.27
ELECTRONIC SWITCH*	012584120	$74,742	18	24	8.62	5.91
				TOTAL	**39.52**	**38.75**

Table 49. FY 2006 Anomalies for AEGIS MK-7 Modifications.

In FY 2007, 13 NIINs for the MK-7 system met our anomaly criteria. These 13 NIINs accounted for 39.88 percent of the total MK-7 system expenditures for PACFLT cruisers and 52.43 percent of the total MK-7 system expenditures for LANTFLT cruisers and are shown in Table 50.

FY 2007 ANOMALIES FOR AEGIS MK-7MODIFICATIONS						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
ELECTRON TUBE*	013926982	$2,639	332	269	6.41	6.16
CIRCUIT CARD ASSEMBLY*	012584223	$2,648	110	70	2.13	1.61
HEAT TRANSFER FLUID	011255270	$443	466	340	1.51	1.31
CONVERTER,FREQU ENCY	015334188	$25,152	12	10	2.21	2.18
ELECTRON TUBE*	013228417	$34,331	21	20	5.27	5.96
ELECTRONIC SWITCH	013892836	$35,748	6	6	1.57	1.86
ELECTRONIC SWITCH*	012584120	$7,364	29	30	1.56	1.92
INVERTER,POWER, STAT*	014657498	$13,965	15	16	1.53	1.94
ELECTRONIC SWITCH	012584121	$35,475	6	8	1.56	2.46
AMPLIFIER,RADIO FRE	014531943	$110,945	7	8	5.68	7.70
AMPLIFIER,RADIO FRE	012647727	$38,136	4	7	1.12	2.32
ELECTRON TUBE	014477074	$84,297	8	12	4.93	8.78
ELECTRON TUBE*	013221337	$31,680	19	30	4.40	8.25
				TOTAL	**39.88**	**52.43**

Table 50. FY 2007 Anomalies for AEGIS MK-7 Modifications.

Six of these NIINs were anomalies both fiscal years analyzed.[38] In FY 2006, these six NIINs accounted for 24.64 percent of the total MK-7 system expenditures for PACFLT cruisers and 23.69 percent of the total MK-7 system expenditures for LANTFLT cruisers. In FY 2007, these six NIINs accounted for 21.3 percent of the total MK-7 system expenditures for PACFLT cruisers and 25.84 percent of the total MK-7 system expenditures for LANTFLT cruisers.

2. General Spaces

In FY 2006, three NIINs for General Spaces met our anomaly criteria. These three NIINs accounted for just 5.4 percent of the total General Spaces system expenditures for PACFLT cruisers and 13.8 percent of the total General Spaces system expenditures for LANTFLT cruisers and are shown in Table 51.

[38] NIINs annotated by an asterisk met our anomaly criteria both fiscal years analyzed.

FY 2006 ANOMALIES FOR GENERAL SPACES SYSTEM						
NOMENCLATURE	NIIN	UNIT COST	PAC DMD	LANT DMD	% OF PAC SYS EXP	% OF LANT SYS EXP
ELECTRONIC SWITCH	012584120	$74,742	2	1	2.48	1.93
PANEL, COLOR ENTRY	015325323	$11,794	8	9	1.56	2.75
HEAT TRANSFER FLUID	011255270	$443	185	795	1.36	9.11
				TOTAL	**5.40**	**13.79**

Table 51. FY 2006 Anomalies for General Spaces.

In FY 2007, the General Spaces system was not one of the ten most costly systems for PACFLT and LANTFLT cruisers due to the reclassification of system expenditures by SWE management.

3. Launcher

In FY 2006, nine NIINs for Launcher system met our anomaly criteria. These nine NIINs accounted for 64.51 percent of the total Launcher system expenditures for PACFLT cruisers and 53.56 percent of the total Launcher system expenditures for LANTFLT cruisers and are shown in Table 52.

FY 2006 ANOMALIES FOR LAUNCHER SYSTEM						
NOMENCLATURE	NIIN	UNIT COST	PAC DMD	LANT DMD	% OF PAC SYS EXP	% OF LANT SYS EXP
POWER SUPPLY*	012719705	$29,285	43	38	36.75	23.06
POWER SUPPLY	012719706	$49,139	3	1	4.30	1.02
POWER SUPPLY ASSEMBLY	012719701	$30,024	5	4	4.38	2.49
REGULATOR, VOLTAGE	013807594	$82,268	1	1	2.40	1.70
MOTOR, DIRECT CURRENT	012740617	$8,528	8	11	1.99	1.94
ELECTRONIC COMPONENT	012833414	$20,215	4	9	2.36	3.77
CIRCUIT CARD ASSEMBLY	013883268	$29,817	7	12	6.09	7.41
REGULATOR, VOLTAGE	012719765	$86,844	2	4	5.07	7.20
CABLE AND CONDUIT AS*	012740813	$13,291	3	18	1.16	4.96
				TOTAL	**64.51**	**53.56**

Table 52. FY 2006 Anomalies for Launcher System.

In FY 2007, five NIINs for Launcher system met our anomaly criteria. These five NIINs accounted for 42.50 percent of the total Launcher system expenditures for PACFLT cruisers and 49.04 percent of the total Launcher system expenditures for LANTFLT cruisers and are shown in Table 53.

FY 2007 ANOMALIES FOR LAUNCHER SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
GENERATOR, ELECTRONIC	012706316	$48,466	4	1	13.33	5.67
CABLE AND CONDUIT A*	012740813	$6,133	16	4	6.75	2.87
CABLE AND CONDUIT A	012719775	$5,729	4	2	1.58	1.34
POWER SUPPLY	013722818	$7,314	4	6	2.01	5.13
POWER SUPPLY*	012719705	$5,709	48	51	18.84	34.04
				TOTAL	**42.50**	**49.04**

Table 53. FY 2007 Anomalies for Launcher System.

Two of these NIINs were anomalies both fiscal years analyzed. In FY 2006, these two NIINs accounted for 37.91 percent of the total Launcher system expenditures for PACFLT cruisers and 28.02 percent of the total Launcher system expenditures for LANTFLT cruisers. In FY 2007, these two NIINs accounted for 25.59 percent of the total Launcher system expenditures for PACFLT cruisers and 36.91 percent of the total Launcher system expenditures for LANTFLT cruisers.

4. Satellite Communications

In FY 2006, 10 NIINs for Satellite Communications System met our anomaly criteria. These 10 NIINs accounted for 60 percent of the total Satellite Communications System expenditures for PACFLT cruisers and 66 percent of the total Satellite Communications System expenditures for LANTFLT cruisers and are shown in Table 54.

FY 2006 ANOMALIES FOR SATELLITE COMMUNICATIONS SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
CIRCUIT CARD ASSEMBLY	014808485	$19,871	15	4	6.41	2.15
SENSOR ASSEMBLY*	014962599	$31,811	11	5	7.52	4.30
CONVERTER, SIGNAL DA	014711431	$59,200	3	1	3.82	1.60
AMPLIFIER, RADIO FRE*	014827596	$79,194	18	17	30.64	36.37
CIRCUIT CARD ASSEMBLY	015089920	$34,485	3	2	2.22	1.86
CONVERTER, FREQUENCY	015091530	$59,389	2	2	2.55	3.21
ELECTRONIC COMPONENT	014828808	$70,362	1	1	1.51	1.90
DRIVE, ANTENNA*	014692465	$15,015	7	12	2.26	4.87
CIRCUIT CARD ASSEMBLY	015089498	$79,797	1	2	1.72	4.31
GYROSCOPE, RATE*	015091670	$34,456	2	6	1.48	5.58
				TOTAL	**60.13**	**66.15**

Table 54. FY 2006 Anomalies for Satellite Communications System.

In FY 2007, nine NIINs for Satellite Communications System met our anomaly criteria. These nine NIINs accounted for 42.29 percent of the total Satellite Communications System expenditures for PACFLT cruisers and 62.45 percent of the total Satellite Communications System expenditures for LANTFLT cruisers and are shown in Table 55.

FY 2007 ANOMALIES FOR SATELLITE COMMUNICATIONS SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
DRIVE,ANTENNA*	014692465	$6,070	19	7	5.43	3.31
PANEL,POWER DISTRIB	015149267	$39,200	2	1	3.69	3.06
AMPLIFIER, RADIO FREQ*	014827596	$16,761	15	13	11.83	16.99
GYROSCOPE,DISPLACEM	012981072	$9,452	5	4	2.22	2.95
AMPLIFIER, RADIO FREQ	015092987	$32,587	8	8	12.27	20.33
CIRCUIT CARD ASSEMBLY	015093000	$16,170	2	2	1.52	2.52
SENSOR ASSEMBLY*	014962599	$5,330	6	7	1.51	2.91
CIRCUIT CARD ASSEMBLY	014827508	$5,785	8	9	2.18	4.06
GYROSCOPE,RATE*	015091670	$11,591	3	7	1.64	6.33
				TOTAL	**42.29**	**62.45**

Table 55. FY 2007 Anomalies for Satellite Communications System.

Four of these NIINs were anomalies both the fiscal years analyzed. In FY 2006, these four NIINs accounted for 41.9 percent of the total Satellite Communications System expenditures for PACFLT cruisers and 51.12 percent of the total Satellite Communications System expenditures for LANTFLT cruisers. In FY 2007, these four NIINs accounted for 20.41 percent of the total Satellite Communications System expenditures for PACFLT cruisers and 29.54 percent of the total Satellite Communications System expenditures for LANTFLT cruisers.

5. Gas Turbine Module Propulsion

In FY 2006, seven NIINs for Gas Turbine Propulsion system met our anomaly criteria. These seven NIINs accounted for 61 percent of the total Gas Turbine Propulsion system expenditures for PACFLT cruisers and 45 percent of the total Gas Turbine Propulsion system expenditures for LANTFLT cruisers and are shown in Table 56.

FY 2006 ANOMALIES FOR GAS TURBINE PROPULSION SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
SENSOR, CONTROL	006011236	$19,997	12	5	18.80	6.50
VALVE, REGULATING, FL*	013608499	$10,578	9	4	7.46	2.75
VALVE, BUTTERFLY*	006137245	$12,616	4	3	3.95	2.46
ACTUATOR, POWE, LEVEL	014818695	$13,875	3	3	3.26	2.70
MANIFOLD, GAS TURBINE	010058465	$5,281	7	8	2.90	2.74
PUMP, ROTARY	006137243	$29,198	2	3	4.57	5.69
STARTER, ENGINE, AIR*	013608581	$86,886	3	4	20.42	22.58
				TOTAL	**61.36**	**45.42**

Table 56. FY 2006 Anomalies for Gas Turbine Propulsion System.

In FY 2007, nine NIINs for Gas Turbine Propulsion system met our anomaly criteria. These nine NIINs accounted for 42.20 percent of the total Gas Turbine Propulsion system expenditures for PACFLT cruisers and 50.47 percent of the total Gas Turbine Propulsion system expenditures for LANTFLT cruisers and are shown in Table 57.

FY 2007 ANOMALIES FOR GAS TURBINE PROPULSION SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
MAIN FUEL CONTROL	012394886	$26,457	5	3	12.30	8.88
THERMOCOUPLE,TOP	005966273	$11,535	4	1	4.29	1.29
TRANSDUCER,GAS TURB	006028050	$11,732	3	1	3.27	1.31
TRANSDUCER,MOTIONAL	014828743	$5,187	4	2	1.93	1.16
VALVE, BUTTERFLY*	006137245	$10,149	3	2	2.83	2.27
VALVE, REGULATING,FL*	013608499	$7,782	9	8	6.51	6.96
VALVE,BUTTERFLY	013608437	$6,489	4	3	2.41	2.18
MANIFOLD,FUEL LEFT	006162265	$21,544	1	1	2.00	2.41
STARTER,ENGINE, AIR*	013608581	$17,890	4	12	6.65	24.01
				TOTAL	**42.20**	**50.47**

Table 57. FY 2007 Anomalies for Gas Turbine Propulsion System.

Three of these NIINs were anomalies both fiscal years analyzed. In FY 2006, these three NIINs accounted for 31.83 percent of the total Gas Turbine Propulsion system expenditures for PACFLT cruisers and 27.79 percent of the total Gas Turbine Propulsion system expenditures for LANTFLT cruisers. In FY 2007, these three NIINs accounted for 15.99 percent of the total Gas Turbine Propulsion system expenditures for PACFLT cruisers and 33.24 percent of the total Gas Turbine Propulsion system expenditures for LANTFLT cruisers.

6. MK-86 Fire Control

In FY 2006, four NIINS for MK-86 system met our anomaly criteria. These four NIINs accounted for 60 percent of the total MK-86 system expenditures for PACFLT cruisers and 48 percent of the total MK-86 system expenditures for LANTFLT cruisers and are shown in Table 58.

FY 2006 ANOMALIES FOR MK-86 SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
CAMERA, TELEVISION	014541736	$61,792	8	4	28.04	19.91
ELECTRON TUBE	004502229	$57,373	3	1	9.76	4.62
MONITOR, TELEVISION	010865274	$51,772	6	4	17.62	16.69
OSCILLATOR, NONCRYSTAL	005652388	$12,752	6	7	4.34	7.19
				TOTAL	**59.76**	**48.42**

Table 58. FY 2007 Anomalies for MK-86 System.

In FY 2007, the MK-86 system was not one of the ten most costly systems for PACFLT and LANTFLT cruisers.

7. Surface Intercept and Analysis

In FY 2006, 10 NIINs Intercept and Analysis system met our anomaly criteria. These 10 NIINs accounted for 60 percent of the total Intercept and Analysis system expenditures for PACFLT cruisers and 36.9 percent of the total Intercept and Analysis system expenditures for LANTFLT cruisers and are shown in Table 59.

FY 2006 ANOMALIES FOR SURFACE INTERCEPT SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
ELECTRON TUBE*	011577009	$6,063	137	16	36.07	6.46
TUNER, RADIO FREQUENCY*	014965962	$32,689	5	3	7.10	6.53
MODULATOR SUBASSEMBLY	012982953	$9,761	5	2	2.12	1.30
CIRCUIT CARD ASSEMBLY	014683838	$18,909	2	1	1.64	1.26
MODULE, RADIO FREQUENCY	011641509	$8,893	6	5	2.32	2.96
POWER SUPPLY*	011637619	$12,323	11	11	5.89	9.03
MODULE, V-UHF DISTR	014684360	$34,113	1	1	1.48	2.27
CIRCUIT CARD ASSEMBLY	014965937	$26,937	1	1	1.17	1.79
SWITCH, RADIO FREQUENCY	011632845	$24,389	1	1	1.06	1.62
CIRCUIT CARD ASSEMBLY	014965936	$18,299	2	3	1.59	3.66
				TOTAL	**60.44**	**36.90**

Table 59. FY 2006 Anomalies for Surface Intercept and Analysis System.

In FY 2007, seven NIINs Intercept and Analysis system met our anomaly criteria. These seven NIINs accounted for 52.07 percent of the total Intercept and Analysis system expenditures for PACFLT cruisers and 55.63 percent of the total Intercept and Analysis system expenditures for LANTFLT cruisers and are shown in Table 60.

FY 2007 ANOMALIES FOR SURFACE INTERCEPT SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
ELECTRON TUBE*	011577009	$3,600	117	58	25.28	25.74
TUNER,RADIO FREQUENCY*	014965962	$12,555	17	9	12.81	13.93
RECEIVER,RADIO	014955021	$16,322	3	1	2.94	2.01
CONVERTER, FREQUENCY	014983066	$21,392	4	3	5.14	7.91
DISTRIBTION UNIT,HI	011495464 VN	$6,928	5	2	2.08	1.71
POWER SUPPLY,UNINTE	015246638	$9,256	3	1	1.67	1.14
POWER SUPPLY*	011637619	$5,149	7	5	2.16	3.17
				TOTAL	**52.07**	**55.63**

Table 60. FY 2007 Anomalies for Surface Intercept and Analysis System.

Three of these NIINs were anomalies both fiscal years analyzed. In FY 2006, these three NIINs accounted for 49.06 percent of the total Intercept and Analysis system expenditures for PACFLT cruisers and 22.02 percent of the total Intercept and Analysis system expenditures for LANTFLT cruisers. In FY 2007, these three NIINs accounted for 40.25 percent of the total Intercept and Analysis system expenditures for PACFLT cruisers and 42.84 percent of the total Intercept and Analysis system expenditures for LANTFLT cruisers.

8. Engineering Plant Control and Surveillance

In FY 2006, 11 NIINs for Engineering Plant Control and Surveillance system met our anomaly criteria. These 11 NIINs accounted for 47.24 percent of the total Engineering Plant Control and Surveillance system expenditures for PACFLT cruisers and 49.37 percent of the total Engineering Plant Control and Surveillance system expenditures for LANTFLT cruisers and are shown in Table 61.

FY 2006 ANOMALIES FOR ENGINEERING PLANT CONTROL AND SURVEILLANCE SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
ELECTRONIC COMPONENT	013108002	$47,739	3	1	7.58	2.41
CIRCUIT CARD ASSEMBLY	011356458	$9,593	18	12	9.14	5.81
CIRCUIT CARD ASSEMBLY	014715788	$5,780	10	8	3.06	2.33
CIRCUIT CARD ASSEMBLY*	010395592	$1,236	30	26	1.96	1.62
POWER SUPPLY	014420672	$25,080	1	1	1.33	1.27
CIRCUIT CARD ASSEMBLY*	014715780	$9,535	3	5	1.51	2.41
CIRCUIT CARD ASSEMBLY*	011349739	$9,370	20	24	9.92	11.35
TERMINAL, DATA PROCESSING*	015216927	$40,387	1	2	2.14	4.08
CIRCUIT CARD ASSEMBLY	011349756	$9,050	17	22	8.14	10.05
ELECTRONIC COMPONENT	013101485	$25,601	1	3	1.36	3.88
ELECTRONIC COMPONENT	013101482	$20,672	1	4	1.09	4.17
				TOTAL	**47.24**	**49.37**

Table 61. FY 2006 Anomalies for Engineering Plant Control and Surveillance System.

In FY 2007, six NIINs for Engineering Plant Control and Surveillance system met our anomaly criteria. These six NIINs accounted for 15 percent of the total Engineering Plant Control and Surveillance system expenditures for PACFLT cruisers and 23.13 percent of the total Engineering Plant Control and Surveillance system expenditures for LANTFLT cruisers and are shown in Table 62.

FY 2007 ANOMALIES FOR ENGINEERING PLANT CONTROL AND SURVEILLANCE SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
CIRCUIT CARD ASSEMBLY*	010395592	$993	38	14	2.92	2.31
CIRCUIT CARD ASSEMBLY*	014715780	$5,596	7	3	3.03	2.79
CIRCUIT CARD ASSEMBLY*	011349739	$1,492	30	22	3.46	5.46
DETECTOR UNIT	011387507	$268	82	65	1.70	2.90
INDICATOR, DIGITAL D	010581912 GL	$26,049	1	1	2.02	4.33
TERMINAL, DATA PROCESSOR*	015216927	$8,026	3	4	1.86	5.34
				TOTAL	**15.00**	**23.13**

Table 62. 2006 Anomalies for Engineering Plant Control and Surveillance System.

Four of these NIINs were anomalies both fiscal years analyzed. In FY 2006, these four NIINs accounted for 15.53 percent of the total Engineering Plant Control and Surveillance system expenditures for PACFLT cruisers and 19.46 percent of the total Engineering Plant Control and Surveillance system expenditures for LANTFLT cruisers. In FY 2007, these four NIINs accounted for 11.27 percent of the total Engineering Plant Control and Surveillance system expenditures for PACFLT cruisers and 15.90 percent of the total Engineering Plant Control and Surveillance system expenditures for LANTFLT cruisers.

9. MK-15 Close-In Weapon

In FY 2006, 10 NIINs for MK-15 Close-In Weapon system met our anomaly criteria. These 10 NIINs accounted for 38.42 percent of the total MK-15 Close-In Weapon system expenditures for PACFLT cruisers and 52.10 percent of the total MK-15 Close-In Weapon system expenditures for LANTFLT cruisers and are shown in Table 63.

FY 2006 ANOMALIES FOR MK-15 CLOSE-IN WEAPON SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
LOADR, AMMUNITION	012230806	$60,483	3	1	5.19	2.14
ENTRANCE UNIT ASSEMBLY	012307383	$31,291	4	1	3.58	1.11
AIR DRYER ASSEMBLY	011979828	$16,691	12	7	5.73	4.14
CIRCUIT CARD ASSEMBLY	012335955	$49,462	2	1	2.83	1.75
AIR COMPRESSOR ASSEMBLY	011979826	$6,335	13	6	2.36	1.35
PUMP UNIT, CENTRIFUGAL*	013622973	$25,830	9	8	6.65	7.32
DRUM, INNER	012510574	$60,789	1	2	1.74	4.31
GYROSCOPE, RATE*	011594340	$9,764	5	13	1.40	4.50
GYROSCOPE, RATE	011769727	$29,173	2	5	1.67	5.17
VERTICAL REFERNCE	011638714	$63,730	4	9	7.29	20.32
				TOTAL	**38.42**	**52.10**

Table 63. FY 2006 Anomalies for MK-15 Close-In Weapon System.

In FY 2007, four NIINs for MK-15 Close-In Weapon system met our anomaly criteria. These four NIINs accounted for 24.86 percent of the total MK-15 Close-In Weapon system expenditures for PACFLT cruisers and 22.66 percent of the total MK-15 Close-In Weapon system expenditures for LANTFLT cruisers and are shown in Table 64.

FY 2007 ANOMALIES FOR MK-15 CLOSE-IN WEAPON SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
PUMP UNIT,CENTRIFUG*	013622973	$7,614	14	5	7.05	4.01
AMPLIFIER,AUDIO FRE	013173676	$65,510	2	1	8.66	6.90
AIR DRYER ASSEMBLY	011979828	$5,948	20	9	7.87	5.64
GYROSCOPE,RATE*	011594340	$6,453	3	9	1.28	6.12
				TOTAL	**24.86**	**22.66**

Table 64. FY 2007 Anomalies for MK-15 Close-In Weapon System.

Two of these NIINs were anomalies across the fiscal years analyzed. In FY 2006, these two NIINs accounted for 8.05 percent of the total MK-15 Close-In Weapon system expenditures for PACFLT cruisers and 11.82 percent of the total MK-15 system expenditures for LANTFLT cruisers. In FY 2007, these two NIINs accounted for 8.33

percent of the total MK-15 Close-In Weapon system expenditures for PACFLT cruisers and 10.13 percent of the total MK-15 Close-In Weapon system expenditures for LANTFLT cruisers.

10. Ship Service Generating Plants

In FY 2006, five NIINs for Ship Service Generating Plant system met our anomaly criteria. These five NIINs accounted for 10.66 percent of the total Ship Service Generating Plant system expenditures for PACFLT cruisers and 14.31 percent of the total Ship Service Generating Plant system expenditures for LANTFLT cruisers and are shown in Table 65.

FY 2006 ANOMALIES FOR SHIP SERVICE GENERATING PLANT SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
STARTER, ENGINE, AIR	014971952	$35,450	5	2	3.21	1.69
THERMOCOUPLE, IMMERSION	010746671	$504	174	115	1.59	1.38
VALVE, SOLENOID	012411959	$17,193	8	8	2.49	3.28
PANEL, COLOR ENTRY	015325323	$11,794	8	9	1.71	2.53
ACCY DRIVE UNIT	010317639	$45,376	2	5	1.65	5.42
				TOTAL	**10.66**	**14.31**

Table 65. FY 2006 Anomalies for Ship Service Generating Plant System.

In FY 2007, Ship Service Generating Plant system was not one of the ten most costly systems for PACFLT and LANTFLT cruisers.

11. Storerooms and Stowage Lockers

In FY 2007, seven NIINs for Storerooms and Stowage Lockers system met our anomaly criteria. These seven NIINs accounted for 34.83 percent of the total Storerooms and Stowage Lockers system expenditures for PACFLT cruisers and 15.46 percent of the total Storerooms and Stowage Lockers system expenditures for LANTFLT cruisers and are shown in Table 66.

FY 2007 ANOMALIES FOR STOREROOMS AND STOWAGE LOCKERS SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
BREATHING APPARATUS	014395937	$340	568	10	18.33	1.55
REDUCER, PRESSURE,RE	012509073	$900	59	3	5.04	1.23
FAN,VANEAXIAL	013332224	$5,792	9	1	4.95	2.64
GEAR,FIRE PROTECTIV	014685565	$1,118	22	2	2.33	1.02
VALVE, BREATHING APP	014495342	$371	56	15	1.94	2.54
VOICE AMPLIFIER	014393958	$356	34	16	1.15	2.60
FACEPIECE, BREATHING	014895316	$160	73	55	1.09	3.87
				TOTAL	**34.83**	**15.46**

Table 66. FY 2007 Anomalies for Storerooms and Stowage Lockers System.

In FY 2006, Storerooms and Stowage Lockers system was not one of the ten most costly systems for PACFLT and LANTFLT cruisers.

12. Firemains FLS, Sprinklers, Saltwater Washdown Service

In FY 2007, four NIINs for Firemain FLS, Sprinklers, Saltwater Washdown Service system met our anomaly criteria. These four NIINs accounted for 13.29 percent of the total Firemain FLS, Sprinklers, Saltwater Washdown Service system expenditures for PACFLT cruisers and 15.16 percent of the total Firemain FLS, Sprinklers, Saltwater Washdown Service system expenditures for LANTFLT cruisers and are shown in Table 67.

FY 2007 ANOMALIES FOR FIREMAIN FLS, SPRINKLERS, SALTWATER WASHDOWN SERVICE SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
VALVE,SOLENOID	011388937	$5,813	12	7	5.43	6.39
VALVE,PILOT CONTROL	002566642	$451	65	17	2.28	1.20
STRAINER, SEDIMENT	013923997	$9,062	5	3	3.53	4.27
VALVE,CHECK	004950154	$5,256	5	4	2.05	3.30
				TOTAL	**13.29**	**15.16**

Table 67. FY 2007 Anomalies for Firemain FLS, Sprinklers, Saltwater Washdown Service System.

In FY 2006, Firemain FLS, Sprinklers, Saltwater Washdown Service was not one of the ten most costly systems for PACFLT and LANTFLT cruisers.

13. Collision Avoidance

In FY 2007, five NIINs for Collision Avoidance system met our anomaly criteria. These five NIINs accounted for 91.12 percent of the total Collision Avoidance system expenditures for PACFLT cruisers and 98.33 percent of the total Collision Avoidance system expenditures for LANTFLT cruisers and are shown in Table 68.

FY 2007 ANOMALIES FOR COLLISION AVOIDANCE SYSTEM						
NOMENCLATURE	**NIIN**	**UNIT COST**	**PAC DMD**	**LANT DMD**	**% OF PAC SYS EXP**	**% OF LANT SYS EXP**
INERTIAL MEASURING	014950012	$168,928	5	3	48.63	33.08
GYRO,RING LASER	014708736	$44,596	3	1	7.70	2.91
BATTERY ASSEMBLY	014708756	$5,292	10	4	3.05	1.38
GYRO,RING LASER	014708737	$44,596	1	2	2.57	5.82
INERTIAL MEAS UNIT	014708747	$168,928	3	5	29.18	55.13
				TOTAL	**91.12**	**98.33**

Table 68. FY 2007 Anomalies for Collision Avoidance System.

In FY 2006, Collision Avoidance system was not one of the ten most costly systems for PACFLT and LANTFLT cruisers.

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IV. DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

A. DISCUSSION AND CONCLUSIONS

1. Sub-Accounts

a. Utilities and Other Costs (SO)

PACFLT consumed $4.9 million more than LANTFLT in SO expenditures in FY 2006 and FY 2007. Eight of the top 10 most costly cruisers were assigned to PACFLT in both fiscal years. The difference in SO expenditures between LANTFLT and PACFLT decreased 47 percent from FY 2006 to FY 2007. Also, we did find that Expense Element (T) overlaps the two sub-accounts of SO and SR and Expense Element (E) overlaps the two sub-accounts SO and SX. As we discussed earlier, the baseline configuration and with the highest mean expenditures changed from FY 2006 to FY 2007; a cruiser's configuration was not a reliable predictor of SO expenditures. The five oldest cruisers had a higher mean of SO expenditures in FY 2006 but did not in FY 2007; a cruiser's age did not reliably predict SO expenditures. Battle E winners and non-winners each had the highest mean expenditures in one of the fiscal years; a cruiser's SO expenditures do not appear to be directly related to winning the Battle E.

b. Supplies and Equipage (SR)

PACFLT consumed $13.8 million more than PACFLT in SR expenditures in FY 2006 and FY 2007. The difference in SR expenditures between LANTFLT and PACFLT increased 108 percent from FY 2006 to FY 2007. The spread between the most expensive cruiser and least expensive cruiser was $2,780,312 in FY 2006 and decreased to $2,118,595 in FY 2007. This may be attributable to OPTEMPO since the SR account consists of expense elements Supplies and Repair-AVDLR both of which will require more expenditures when cruisers are in an operating environment. As we previously indicated, the baseline configuration with the highest mean expenditures changed from FY 2006 to FY 2007; a cruiser's configuration was not a reliable predictor of SR expenditures. The five youngest cruisers had a higher mean of SR expenditures in FY 2006 but did not in FY 2007; a cruiser's age did not reliable predict SR expenditures.

Battle E winners and non-winners each had the highest mean expenditures in one of the fiscal years; a cruiser's SR expenditures do not appear to be directly related to winning the Battle E.

c. TAD for Shipboard & Afloat Staff Personnel (SX)

PACFLT consumed $94,000 less in FY 2006 however; in FY 2007 PACFLT consumed $357,000 more than LANTFLT. Nine of the top 10 most costly cruisers were not assigned to fleet concentration centers (Norfolk and San Diego) in both fiscal years. We also found that Expense Element (E) overlaps the two sub-accounts of SO and SX. As we mentioned earlier, the baseline configuration and with the highest mean expenditures changed from FY 2006 to FY 2007; a cruiser's configuration was not a reliable predictor of SO expenditures. The five youngest cruisers had a higher mean of SO expenditures in FY 2006 but did not in FY 2007; a cruiser's age did not reliably predict SO expenditures. Battle E winners and non-winners each had the highest mean expenditures in one of the fiscal years; a cruiser's SO expenditures do not appear to be directly related to winning the Battle E.

2. Expense Elements

Unlike at the sub-account level, the expense element level of analysis provided a clearer picture of which groups of ships had higher mean expenditures in FY 2006 and FY 2007. The expense element groups that we compared were PACFLT cruisers to LANTFLT cruisers, Baseline 2 cruisers to Baseline 3 and 4 cruisers, PACFLT cruisers homeported in CONUS to OCONUS cruisers, LANTFLT cruisers homeported in Mayport to Norfolk homeported cruisers. Some of the groups that were compared at the expense element level were not compared at the sub-account level because the purpose of the research was to identify underlying causes for lower expenditures for LANFLT.

a. Supplies

LANTFLT cruisers were approximately $300,000 less expensive per ship for both years. A former CG Supply Officer explained to us that training of the maintenance personnel may have caused the differences in demand. He mentioned that in one instance, a power supply was ordered that had a unit cost of approximately $30,000. He issued the power supply from his storeroom and within an hour another power supply (the same NIIN) was ordered. This caused him to contact the responsible

department head and inquire about the failure and specifically asked if the maintenance personnel had attempted to troubleshoot the next higher assembly. In fact, the maintenance personnel had not troubleshot the next higher assembly. When they did, they repaired the system with a NIIN that had a unit cost of less than $10.

We could not identify anything to draw conclusions at this level of analysis. However, at the system level there was significantly more detail available in which to draw conclusions.

b. Travel of Personnel

Based on the results of our research, we concluded that transportation expenditures for the two years analyzed grew at a proportional rate for each fleet. Both PACFLT and LANTFLT expenditures increased 21 percent from FY 2006 to FY 2007. Increased fuel costs over the period contributed to the increased expenditures. The average increase in fuel costs for the period was approximately 21 percent for both fleets.[39] The lack of detailed data and the overlap of Expense Element (E) in our research did not allow us to conclude why the costs are higher in PACFLT. However, higher fuel costs in PACFLT are likely to have contributed to a portion of the difference. The cost of a gallon of unleaded regular gasoline was 5.2 percent higher for PACFLT during the timeframe analyzed. Additionally, we have observed in the past, that ships have different policies for turning vehicles into Public Works. Also, commanding officers have required a different number of vehicles. These factors may have influenced the level of travel of personnel expenditures.

In LANTFLT, the data indicated that Mayport cruisers consumed three times the amount of funding that Norfolk cruisers consumed. The fact that certain training facilities are closer to Norfolk than to Mayport is likely to have impacted the difference. For example, The AEGIS Training Readiness Center is located in Dahlgren, VA. Dahlgren is 530 miles closer to Norfolk, VA than to Mayport, FL. Cruisers can

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[39] U.S. Department of Labor, "Bureau of Labor Statistics Data," http://data.bls.gov/PDQ/servlet/SurveyOutputServlet (accessed May 2, 2008).

send a group in a ship's van to the training site rather than paying for individual airline tickets. We observed that same trend for CONUS cruisers due to their close proximity to training facilities in San Diego for instance the damage control training facilities.

c. Equipment

We observed no trend for this expense element. Fluctuations in means between the groups were analyzed and we could not identify a relationship. For example, LANTFLT increased their expenditures by nearly 400 percent from FY 2006 to FY 2007. Mayport was less expensive in FY 2006 then more expensive than Norfolk in FY 2007.

d. Services

We observed no pattern for this expense element. There were fluctuations in means between the groups analyzed and we could not identify a relationship. For example, in FY 2007, USS GETTYSBURG spent only three months deployed, yet it had the highest service expenditures. On the contrary, USS VELLA GULF was the second most expensive, yet it was deployed for six months during FY 2007. OPTEMPO may have accounted for these fluctuations but the lack of detail identifying what services were procured prevented us from identifying any meaningful relationships.

Services for OCONUS cruisers could be subject to agreements with foreign countries and their exchange rate. From October 2005 to September 2007 the dollar exchange rate decreased by five percent.[40]

Another factor could be that Commander Navy Installations, rather than PACFLT, pays for Crane services in San Diego. In LANTFLT, the ships pay for crane services directly from their OPTAR.[41] This factor would at least account for some of the higher expenditures in the Services expense element for LANTFLT cruisers. Questions still remain unanswered such as: Does one fleet require more stevedore service than another does? Does one fleet require more piloting services than another does due to its homeport's geography? If there is a difference then this will assist in budgeting for those services but will not level the expenditures between the fleets.

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40 "Exchange Rates," http://www.x-rates.com/ (accessed May 2, 2008).

41 Edward Neal Hering, e-mail message to author, May 13, 2008.

e. Repair-AVDLR

We observed no trend for this expense element. As stated previously, for the Fleet comparison, the cruisers that had the highest mean expenditures were assigned to PACFLT in FY 2006 and LANTFLT in FY 2007. For PACFLT Homeport comparison, the PACFLT cruisers that had the highest mean expenditures were homeported in CONUS in FY 2006 and OCONUS in FY 2007. Because of these fluctuations in averages between the groups analyzed we could not find a relationship. However in practice, we have seen personnel with various levels of training assigned to managing the AVDLR program aboard ships. The personnel assigned to manage the AVDLR program have had various levels of knowledge and experience which may have influenced the expenditures. We have also seen ships allow personnel from the squadron to manage the AVDLR programs. Squadron personnel typically do not have the experience or training required to properly manage the program.

f. Communications

For communication expenditures, the fleets differ in their procedures for funding their requirements. It was not possible to compare the fleets accurately with the data we provided due to different Communications funding policies. LANTFLT funds the costs of cruisers' telephones directly because the TELECOM commands work for LANTFLT. The cruiser is not charged in the process; therefore, LANTFLT cruisers have less expenditures in the Communications expense element.[42]

g. POL-Other

If a cruiser was in a deployed phase, their expenditures were lower. In FY 2006, USS COWPENS and USS CHANCELLORSVILLE were deployed for 12 months and each had approximately $3,000 in expenditures.

h. Printing and Reproduction

OCONUS cruisers accounted for 86 percent of the total expenditures for both years for the entire class. This may have been attributed to the fact that USS SHILOH changed homeports. Additionally, this may have been caused by added official events for the OCONUS cruisers. From our experience, we have observed that deployed

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[42] Edward Neal Hering, e-mail message to author, May 13, 2008.

ships have official visits from foreign dignitaries when conducting a port visit. Because of the close proximity of forward deployed ships to the foreign dignitaries, it is possible official visits of OCONUS cruisers would be more frequent. Another factor could be all ships have access to the publications in an electronic format and should not require a hard copy to be printed. If some of the cruisers are still printing publications then this might cause differences in printing expenditure levels.

3. Systems

Based on our data analysis, seven of the 10 most costly systems were the same in FY 2006 and in FY 2007. In FY 2006, NIINs were erroneously classified into the General Spaces system and corrected before FY 2007. This eliminated the General Spaces system in FY 2007. The MK-86 and the Ship Service Generating Plant systems were not in the 10 most costly system in FY 2007. New to the list of the top 10 most costly systems in FY 2007 were the Collision Avoidance, Storerooms Stowage Locker, and Firemain FLS Sprinkler systems.

The differences in demand, which result in differences in system expenditures, may be attributable to another dimension. Reliability, operational availability (A_o), and maintainability (RAM) provide information on whether the system is performing to its specifications. On its website, the Naval Surface Warfare Center (NSWC) Corona Division states it is the independent assessment agent for RAM and has information about RAM for the combat and weapon systems. It is likely that organizations such as NSWC Corona Division can assist in determining if RAM is influencing system expenditures. They are able to trace the mean time between failures (MTBF) to a NIIN. The MTBF may reveal if NIINs that do not meet the designed MTBF are related to expenditure patterns.

4. System Anomalies

The seven most costly systems that recurred in FY 2007 provided 53 NIINs. Of these 53 NIINs, 24 appeared in both fiscal years. Out of the 24 NIINs, four were electron tubes and five were circuit card assemblies. Only seven of the 53 NIINs did not have a unit price of at least $5,000. Only nine of the 53 NIINs had a total quantity demanded of 50 or more units. All 53 NIINs represented at least one percent of total system

expenditures for both fleets. We conclude that the anomalies were mostly driven by a high unit price and total system expenditures. Table 69 lists the 24 recurring anomalies for FY 2006 and FY 2007. The most costly NIIN was an electron tube for the AEGIS MK-7 Weapon system which accounted for over $4 million during the past two fiscal years. Overall, these 24 anomalies accounted for approximately $30 million.

RECURRING ANOMALIES FOR FY 2006 & FY 2007				
		TOTAL DEMAND		
NOMENCLATURE	NIIN	PAC	LANT	TOTAL COST
ELECTRON TUBE	013926982	603	511	$ 4,011,503
ELECTRONIC SWITCH	012584120	47	54	$ 3,573,640
AMPLIFIER, RADIO FREQ	014827596	33	30	$ 3,241,098
ELECTRON TUBE	013221337	43	44	$ 3,167,016
POWER SUPPLY	012719705	91	89	$ 2,937,276
ELECTRON TUBE	013228417	31	30	$ 2,462,331
CIRCUIT CARD ASSEMBLY	012584223	343	189	$ 1,635,424
INVERTER, POWER, STAT	014657498	21	25	$ 1,561,050
ELECTRON TUBE	011577009	254	74	$ 1,557,639
STARTER, ENGINE, AIR	013608581	7	16	$ 894,442
TUNER, RADIO FREQUENCY	014965962	22	12	$ 587,942
PUMP UNIT, CENTRIFUGAL	013622973	23	13	$ 583,776
SENSOR ASSEMBLY	014962599	17	12	$ 578,266
CIRCUIT CARD ASSEMBLY	011349739	50	46	$ 489,864
DRIVE, ANTENNA	014692465	26	19	$ 443,105
CABLE AND CONDUIT AS	012740813	19	22	$ 401,771
GYROSCOPE, RATE	015091670	5	13	$ 391,558
POWER SUPPLY	011637619	18	16	$ 332,894
VALVE, REGULATING, FLUID	013608499	18	12	$ 269,808
GYROSCOPE, RATE	011594340	8	22	$ 253,188
TERMINAL, DATA PROCESSING	015216927	4	6	$ 177,343
VALVE, BUTTERFLY	006137245	7	5	$ 139,057
CIRCUIT CARD ASSEMBLY	014715780	10	8	$ 132,240
CIRCUIT CARD ASSEMBLY	010395592	68	40	$ 120,852
			Total	$ 29,943,083

Table 69. Recurring Anomalies for FY 2006 & FY 2007.

COMNAVSURFOR Instruction 4400.1 and p. 7005 b. (6) requires Commanding Officers to approve all expenditures of $5,000 or more. This policy assists the Commanding Officer in identifying equipment and supplies that are being ordered more frequently than others. If the Commanding Officers are not adhering to this policy then it may influence the number of anomalies.

B. RECOMMENDATIONS

1. Sub-Accounts

The detail at the sub-account level was insufficient to make recommendations. However, when we continued our analysis at the expense element level, trends were noticeable.

2. Expense Elements

To ensure standardization among the fleets in the Travel of Personnel Expense element, we recommend the CG Class Squadron (CLASSRON) conduct a review of vehicle allowances and procedures for both fleets. This will help the cruisers' expenditures become more uniform.

To ensure the Navy is attaining the greatest return on its expenditures, we recommend performing a cost-benefit analysis for establishing mobile training teams or permanent training facilities in Mayport and an OCONUS site. This should be conducted at the fleet level rather than the class level due to the fact that all ship classes may benefit from mobile training teams or closer permanent training facilities.

To ensure standardization among the fleets in the Services expense element, we recommend that the CLASSRON review the requirements for services in the fleets. Additionally, we recommend standardizing the funding procedures. This will assist the CLASSRON in budgeting and monitoring those services but will not level the expenditures between the fleets.

To ensure accuracy in AVDLR expenses, we recommend the CLASSRON review the training requirements and the experience of the personnel managing the AVDLR program. Also, we recommend the CLASSRON ensures that the ship rather than the squadron is managing the AVDLR program. This will ensure the cruisers are employing the proper personnel for their programs.

To ensure both fleets' communication requirements are budgeted and accounted for in a manner that facilitates oversight, we recommend standardizing the funding procedures. This will assist the CLASSRON in budgeting and monitoring the communications requirements.

To assist in lowering printing and reproduction costs for the CLASSRON, we recommend the CLASSRON ensures all cruisers are supplied with the universe of electronic publications. Additionally, we recommend the CLASSRON research that the use of the OCONUS funds are necessary.

3. Systems

Based on the results of the study, we recommend that the CLASSRON identify the most expensive systems to maintain annually. Once these systems are identified the CLASSRON should team with NSWC Corona Division and track A_o. Once A_o is determined for each cruiser then the CLASSRON can identify which cruisers are performing the best. For those not performing, the CLASSRON can identify the MTBF of the NIINs that decreased the A_o. Once these NIINs are identified, then the CLASSRON should team with Naval Sea Systems Command (NAVSEA) in order to identify the designed MTBF. If the NIIN is not meeting the designed criteria then NAVSEA will need to resolve the issues with the contractor. This ensures the Navy attains the benefits of the contracts awarded. Moreover, it could lead into a review of the maintenance policies and procedures. Finally, it could lower total life cycle costs of the systems. A lower than designed A_o or MTBF has critical impacts across the Navy and should be considered carefully.

If the designed MTBF is being met, then we recommend that the CLASSRON perform an investigation of the maintenance procedures conducted on the most costly systems. This could ensure the procedures are clear and concise and provide adequate instructions to the personnel performing the maintenance.

4. Systems Anomalies

We recommend that CG CLASSRON closely monitor the procurement and usage of the previously mentioned 24 NIINs. CG CLASSRON should review each cruiser's COSAL to ensure that unauthorized stockpiling of these NIINs does not occur. One alternative that could be investigated is a quarterly report from the CG Supply Officers provided to CG CLASSRON that includes demand and utilization of these NIINs.

We recommend a review of the obligation documents for cruisers. Reviewing the obligation documents will help ensure there is compliance with COMNAVSURFOR Instruction 4400.1 and p. 7005 b. (6). Additionally, the commanding officers should utilize a high level of scrutiny when approving supply purchases with a unit price of at least $5,000. Only seven of the 53 NIINS did not have a unit price of at least $5,000.

C. FURTHER AREAS OF STUDY

One of the areas that could be further developed is partitioning the NIINs by baseline rather than by fleet. One of the tasks involved in this analysis was to ensure that each of the NIINs in comparison is applicable within the three baselines. Our concern is that without verifying each of the individual NIINs in each of the baselines, there is a possibility that the data will skew the comparison. For instance, if a NIIN was not part of the cruiser's configuration then there would be no demand and therefore skew the averages for that NIIN.

Our study did not evaluate the relationship between higher expenditures and performance during the Integrated Logistics Overhaul, the Inspection and Surveys, and Combat Systems, Command, Control, Communications and Readiness Assessment. A possible question to be addressed is if the increased levels of spending in preparation for these events equated to increased material and logistical readiness.

Finally, due to the scope of our analysis, our study did not identify the reasons for higher demand of NIINs in either fleet. An area of further study could be the analysis, at the ship level, for why there was a higher failure rate in one fleet. The study could assist CNSF in identifying the specific reasons that the anomalies we identified failed.

APPENDIX A. SELECTED DEFINITIONS

EXPENSE ELEMENT AVIATION DEPOT LEVEL REPAIRABLES (2)

It includes the cost of all NSA 7R Cog Aviation Depot Level Repairable (AVDLR) material.

EXPENSE ELEMENT COMMUNICATIONS (N)

It includes the cost of communications as defined for the portion of object class 23 identified as communication services; includes charges for the transmission of messages from place to place, contractual telephone and teletype service, postage (other than parcel post), rental of post office boxes, and telephone installation charges.

EXPENSE ELEMENT EQUIPMENT (W)

It includes the cost of end-items of equipment defined in object class 31 equipment purchased with o & m funds. Includes plant property classes 3 and 4 (equipment and industrial plant equipment respectively) with a unit cost between $5,000 and $14,999.99, and those items costing an excess of $15,000 which qualify for o& m financing (navy stock account issues or standard items, i.e., items listed in the management list-navy, not carried but authorized for local purchase). Also, includes minor property with a unit value of less than $5,000 and other plant property equipment items listed in pars. 036301-4 or 035401-2 excluded from plant property reporting.

EXPENSE ELEMENT PRINTING AND REPRODUCTION (Y)

It includes the cost of contractual printing and reproduction work (such as work done on printing presses, lithographing, and other duplication), related binding operations, photostating, blueprinting, photography, and microfilming.

EXPENSE ELEMEMT OTHER POL (V)

It includes the cost of petroleum, oil and lubricants used for other an aircraft or ship propulsion, such as fuel used in heating, generating power, making artificial gas, operating powered materials.

EXPENSE ELEMENT PURCHASE SERVICES, OTHER (Q)

It includes the cost of other services as defined for object class 25 except for purchase equipment maintenance as prescribed in expense element P.

EXPENSE ELEMENT SUPPLIES (T)

It includes the cost of all consumable items as defined for object class 26 (also includes aircraft POL consumed during maintenance and the cost of O & M funded end items of equipment having a useful life of less than 1 year) except those included under expense element R, S, and V for fuel and 2 NSA 7R Cog aviation depot level repairable (AVDLR) material.

EXPENSE ELEMENT TRAVEL OF PERSONNEL (E)

It includes the cost of travel and transportation of personnel as defined for object class 21; includes transportation such as commercial transportation charges, rental or passenger carrying vehicles, mileages allowances, and tolls; subsistence for travelers such as per diem allowances; and incidental travel expenses such as baggage transfer and telephone expense; and documents for travel with fund codes (_A) and stand document number.

FLEET RESPONSE TRAINING PLAN (FRTP)

A scalable approach to training managed by the TYCOMs (CNSF for all surface forces) during the maintenance and basic phases, and by the numbered fleet commanders (NFCs: C2F/C3F/C7F) during the integrated and sustainment phases.

INTEGRATED PHASE

The goal of the phase training is to synthesize unit/staff actions into coordinated strike group operations in a challenging, multi-warfare operational environment. It provides an opportunity for strike group decision makers and watch standers to complete staff planning and warfare commander training.

MAINTENANCE PHASE

Normally starts the FRTP cycle and supports the SWE maintenance and modernizations core pillar. This is the preferred period during the entire FRTP in which

major shipyard or depot level repairs, upgrades, and modernization will occur. In addition to the timely completion of the maintenance package units must focus on individual/ team training and achieving unit level readiness.

SHIP ADMINISTRATION (SX)

Funding for operational, administrative, and training travel for military duty personnel assigned to ships and units of the Naval Force. TAD costs are incurred for professional, technical, team, and administration training, emergency leave, and attendance at conferences and meetings (deployment/fleet exercise planning). This Special Interest Code funds Operational Staff which is defined as those staffs that conduct operations on a sea going platform, deploy, or are deployable during a notional Fleet Response Training Plan cycle. These units are identified as afloat units utilizing Service Code V for Atlantic Fleet units or Service Code R for Pacific Fleet units. There shall be no item that can be charged against another Special Interest Code or Line Item included in this Special Interest Code.

SHIP CONSUMABLES (SO)

Funding for administrative and "housekeeping" items, routine maintenance tools and rental of tools not specifically related to, but which may be used in the repair of equipment and other items having a limited shelf life such as lubricants, batteries, boiler compound, and bilge cleaner. Included are equipage items (those listed on AELs) such as damage control pumps and blowers, fire hoses, labor saving devices such as power tools and office machines, life saving and personnel safety equipment (such as life jackets, SCBAs, and life lines), general use consumables such as copier paper, toilet paper, trash bags, and administrative forms. Also, included are machine shop stock, food service items, postage, abrasives, paint, line, logbooks, telephone charges, GSA or local base owned vehicle rental, and lease cost associated with submarine rescue exercises. In addition, mooring lines, underway replenishment gear, lagging, battle lanterns, port services such as tugs, pilots, brows, garbage removal, and water taxis. Lastly, the transportation of things, applicable Authorized Medical Material Allowance List (AMMAL) and Authorized Dental Allowance List (ADAL) items, handling, storage and

disposal of hazardous waste utilizing PWCs that operate unique processing plants should be charged to ships' OPTAR rather than fuel and utilities SICs. There shall be no item that can be charged against another Special Interest Code or Line Item included in this Special Interest Code.

SHIP REPAIR PARTS (SR)

Funding for parts and related material required to conduct organizational level maintenance and repair to installed systems. All repair parts shall be linked to an APL, Stock Number Sequence Listing (SNSL), Integrated Stock Listing (ISL), Naval Sea Systems Command drawing, or technical manual associated with the specific ship class. There shall be no item that can be charged against another Special Interest Code or Line Item in this Special Interest Code.

SUSTAINMENT PHASE

Begins upon completion of the integrated phase, continues through the post-deployment period and ends with the commencement of the subsequent maintenance phase. It consists of a variety of training evolutions designed to sustain war fighting readiness as a group, multi-unit or unit until and following deployment.

APPENDIX B. EXPENSE ELEMENTS FY 2006

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
HUE CITY	CG66	LANT	$301,528	16.7	4
PORT ROYAL	CG73	PAC	$263,445	13.8	4
CHOSIN	CG65	PAC	$227,733	17.3	4
GETTYSBURG	CG64	LANT	$213,244	16.8	3
CAPE ST GEORGE	CG71	LANT	$209,779	14.8	4
LAKE ERIE	CG70	PAC	$205,017	14.9	4
CHANCELLORSVILLE	CG62	PAC	$189,435	18.5	3
PHILIPPINE SEA	CG58	LANT	$171,780	19.1	2
COWPENS	CG63	PAC	$154,636	17.3	3
VICKSBURG	CG69	LANT	$149,700	15.4	4
NORMANDY	CG60	LANT	$146,539	18.3	3
SAN JACINTO	CG56	LANT	$120,070	20.3	2
LAKE CHAMPLAIN	CG57	PAC	$107,053	19.7	2
SHILOH	CG67	PAC	$104,386	15.8	4
ANZIO	CG68	LANT	$94,706	16.0	4
LEYTE GULF	CG55	LANT	$68,682	20.5	2
MOBILE BAY	CG53	PAC	$63,813	21.2	2
VELLA GULF	CG72	LANT	$62,335	14.6	4
PRINCETON	CG59	PAC	$61,361	19.2	3
MONTEREY	CG61	LANT	$49,473	17.9	3
ANTIETAM	CG54	PAC	$36,310	20.8	2
BUNKER HILL	CG52	PAC	$21,692	21.6	2

Table 70. CG Travel of Personnel Expenditures for FY 2006.

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
PORT ROYAL	CG73	PAC	$25,801	13.8	4
BUNKER HILL	CG52	PAC	$25,214	21.6	2
COWPENS	CG63	PAC	$22,509	17.3	3
PRINCETON	CG59	PAC	$20,001	19.2	3
MOBILE BAY	CG53	PAC	$18,018	21.2	2
CHANCELLORSVILLE	CG62	PAC	$15,568	18.5	3
VICKSBURG	CG69	LANT	$13,614	15.4	4
SHILOH	CG67	PAC	$12,778	15.8	4
CHOSIN	CG65	PAC	$10,269	17.3	4
LAKE ERIE	CG70	PAC	$8,633	14.9	4
SAN JACINTO	CG56	LANT	$8,547	20.3	2
LAKE CHAMPLAIN	CG57	PAC	$8,482	19.7	2
PHILIPPINE SEA	CG58	LANT	$7,969	19.1	2
CAPE ST GEORGE	CG71	LANT	$6,364	14.8	4
ANTIETAM	CG54	PAC	$6,199	20.8	2
MONTEREY	CG61	LANT	$6,010	17.9	3
LEYTE GULF	CG55	LANT	$4,896	20.5	2
GETTYSBURG	CG64	LANT	$4,339	16.8	3
HUE CITY	CG66	LANT	$2,498	16.7	4
ANZIO	CG68	LANT	$1,865	16.0	4
VELLA GULF	CG72	LANT	$1,785	14.6	4
NORMANDY	CG60	LANT	$250	18.3	3

Table 71. CG Communications Expenditures for FY 2006.

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
LEYTE GULF	CG55	LANT	$513,610	20.5	2
CHOSIN	CG65	PAC	$462,701	17.3	4
ANZIO	CG68	LANT	$418,418	16.0	4
PHILIPPINE SEA	CG58	LANT	$182,632	19.1	2
LAKE CHAMPLAIN	CG57	PAC	$158,814	19.7	2
HUE CITY	CG66	LANT	$105,939	16.7	4
CAPE ST GEORGE	CG71	LANT	$105,570	14.8	4
NORMANDY	CG60	LANT	$93,011	18.3	3
COWPENS	CG63	PAC	$92,789	17.3	3
MONTEREY	CG61	LANT	$85,296	17.9	3
PORT ROYAL	CG73	PAC	$82,639	13.8	4
ANTIETAM	CG54	PAC	$66,496	20.8	2
VICKSBURG	CG69	LANT	$58,874	15.4	4
SAN JACINTO	CG56	LANT	$48,339	20.3	2
GETTYSBURG	CG64	LANT	$47,986	16.8	3
CHANCELLORSVILLE	CG62	PAC	$44,091	18.5	3
MOBILE BAY	CG53	PAC	$32,486	21.2	2
SHILOH	CG67	PAC	$19,950	15.8	4
VELLA GULF	CG72	LANT	$18,099	14.6	4
PRINCETON	CG59	PAC	$17,783	19.2	3
BUNKER HILL	CG52	PAC	$17,326	21.6	2
LAKE ERIE	CG70	PAC	$4,695	14.9	4

Table 72. CG Services Expenditures for FY 2006.

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
PRINCETON	CG59	PAC	$5,135,742	19.2	3
BUNKER HILL	CG52	PAC	$5,134,165	21.6	2
ANTIETAM	CG54	PAC	$4,938,124	20.8	2
SHILOH	CG67	PAC	$4,913,288	15.8	4
PHILIPPINE SEA	CG58	LANT	$4,854,415	19.1	2
LAKE ERIE	CG70	PAC	$4,821,250	14.9	4
MOBILE BAY	CG53	PAC	$4,750,317	21.2	2
PORT ROYAL	CG73	PAC	$4,744,848	13.8	4
LAKE CHAMPLAIN	CG57	PAC	$4,735,305	19.7	2
CHANCELLORSVILLE	CG62	PAC	$4,725,241	18.5	3
MONTEREY	CG61	LANT	$4,704,241	17.9	3
VICKSBURG	CG69	LANT	$4,664,873	15.4	4
COWPENS	CG63	PAC	$4,656,014	17.3	3
NORMANDY	CG60	LANT	$4,609,795	18.3	3
CAPE ST GEORGE	CG71	LANT	$4,587,731	14.8	4
HUE CITY	CG66	LANT	$4,543,682	16.7	4
VELLA GULF	CG72	LANT	$4,521,756	14.6	4
SAN JACINTO	CG56	LANT	$4,499,525	20.3	2
GETTYSBURG	CG64	LANT	$4,495,136	16.8	3
CHOSIN	CG65	PAC	$4,482,163	17.3	4
LEYTE GULF	CG55	LANT	$4,356,388	20.5	2
ANZIO	CG68	LANT	$4,228,429	16.0	4

Table 73. CG Supply Expenditures for FY 2006.

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
PRINCETON	CG59	PAC	$53,907	19.2	3
VICKSBURG	CG69	LANT	$30,611	15.4	4
PHILIPPINE SEA	CG58	LANT	$27,337	19.1	2
CAPE ST GEORGE	CG71	LANT	$22,521	14.8	4
MONTEREY	CG61	LANT	$21,974	17.9	3
MOBILE BAY	CG53	PAC	$20,322	21.2	2
LEYTE GULF	CG55	LANT	$17,149	20.5	2
GETTYSBURG	CG64	LANT	$15,278	16.8	3
LAKE CHAMPLAIN	CG57	PAC	$11,130	19.7	2
NORMANDY	CG60	LANT	$10,232	18.3	3
HUE CITY	CG66	LANT	$7,169	16.7	4
ANZIO	CG68	LANT	$6,551	16.0	4
SAN JACINTO	CG56	LANT	$4,008	20.3	2
COWPENS	CG63	PAC	$3,508	17.3	3
CHANCELLORSVILLE	CG62	PAC	$3,298	18.5	3
VELLA GULF	CG72	LANT	$2,962	14.6	4
SHILOH	CG67	PAC	$2,943	15.8	4
BUNKER HILL	CG52	PAC	$2,759	21.6	2
ANTIETAM	CG54	PAC	$1,964	20.8	2
PORT ROYAL	CG73	PAC	$1,915	13.8	4
CHOSIN	CG65	PAC	$67	17.3	4
LAKE ERIE	CG70	PAC	$0	14.9	4

Table 74. CG POL-Other Expenditures for FY 2006.

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
PORT ROYAL	CG73	PAC	$297,410	13.8	4
ANTIETAM	CG54	PAC	$204,026	20.8	2
COWPENS	CG63	PAC	$167,192	17.3	3
LEYTE GULF	CG55	LANT	$101,522	20.5	2
CHOSIN	CG65	PAC	$94,560	17.3	4
CHANCELLORSVILLE	CG62	PAC	$91,568	18.5	3
LAKE CHAMPLAIN	CG57	PAC	$84,019	19.7	2
SHILOH	CG67	PAC	$79,272	15.8	4
BUNKER HILL	CG52	PAC	$76,216	21.6	2
MOBILE BAY	CG53	PAC	$63,263	21.2	2
SAN JACINTO	CG56	LANT	$55,214	20.3	2
PRINCETON	CG59	PAC	$46,007	19.2	3
VICKSBURG	CG69	LANT	$37,460	15.4	4
LAKE ERIE	CG70	PAC	$36,273	14.9	4
NORMANDY	CG60	LANT	$21,432	18.3	3
PHILIPPINE SEA	CG58	LANT	$20,421	19.1	2
ANZIO	CG68	LANT	$19,770	16.0	4
MONTEREY	CG61	LANT	$18,126	17.9	3
VELLA GULF	CG72	LANT	$15,461	14.6	4
CAPE ST GEORGE	CG71	LANT	$15,186	14.8	4
HUE CITY	CG66	LANT	$13,130	16.7	4
GETTYSBURG	CG64	LANT	$12,419	16.8	3

Table 75. CG Equipment Expenditures for FY 2006.

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
COWPENS	CG63	PAC	$16,100	17.3	3
LAKE ERIE	CG70	PAC	$10,500	14.9	4
CHANCELLORSVILLE	CG62	PAC	$7,500	18.5	3
PORT ROYAL	CG73	PAC	$6,714	13.8	4
MONTEREY	CG61	LANT	$5,030	17.9	3
HUE CITY	CG66	LANT	$1,506	16.7	4
VICKSBURG	CG69	LANT	$84	15.4	4
PRINCETON	CG59	PAC	$9	19.2	3
CAPE ST GEORGE	CG71	LANT	$0	14.8	4
VELLA GULF	CG72	LANT	$0	14.6	4
ANTIETAM	CG54	PAC	$0	20.8	2
ANZIO	CG68	LANT	$0	16.0	4
BUNKER HILL	CG52	PAC	$0	21.6	2
CHOSIN	CG65	PAC	$0	17.3	4
GETTYSBURG	CG64	LANT	$0	16.8	3
LAKE CHAMPLAIN	CG57	PAC	$0	19.7	2
LEYTE GULF	CG55	LANT	$0	20.5	2
MOBILE BAY	CG53	PAC	$0	21.2	2
NORMANDY	CG60	LANT	$0	18.3	3
PHILIPPINE SEA	CG58	LANT	$0	19.1	2
SAN JACINTO	CG56	LANT	$0	20.3	2
SHILOH	CG67	PAC	$0	15.8	4

Table 76. CG Printing and Reproduction Expenditures for FY 2006.

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
LEYTE GULF	CG55	LANT	$69,147	20.5	2
CHANCELLORSVILLE	CG62	PAC	$62,256	18.5	3
PORT ROYAL	CG73	PAC	$52,150	13.8	4
PHILIPPINE SEA	CG58	LANT	$47,917	19.1	2
PRINCETON	CG59	PAC	$40,584	19.2	3
MOBILE BAY	CG53	PAC	$28,103	21.2	2
SHILOH	CG67	PAC	$26,382	15.8	4
ANTIETAM	CG54	PAC	$19,730	20.8	2
ANZIO	CG68	LANT	$16,672	16.0	4
LAKE ERIE	CG70	PAC	$16,422	14.9	4
LAKE CHAMPLAIN	CG57	PAC	$14,354	19.7	2
VELLA GULF	CG72	LANT	$11,183	14.6	4
COWPENS	CG63	PAC	$8,998	17.3	3
BUNKER HILL	CG52	PAC	$8,089	21.6	2
MONTEREY	CG61	LANT	$8,089	17.9	3
VICKSBURG	CG69	LANT	$7,871	15.4	4
CAPE ST GEORGE	CG71	LANT	$7,510	14.8	4
CHOSIN	CG65	PAC	$4,006	17.3	4
HUE CITY	CG66	LANT	$2,712	16.7	4
GETTYSBURG	CG64	LANT	$0	16.8	3
NORMANDY	CG60	LANT	$0	18.3	3
SAN JACINTO	CG56	LANT	$0	20.3	2

Table 77. CG Repair-AVDLR Expenditures for FY 2006.

APPENDIX C. EXPENSE ELEMENTS FY 2007

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
PORT ROYAL	CG73	PAC	$302,602	13.8	4
COWPENS	CG63	PAC	$270,349	17.3	3
CHOSIN	CG65	PAC	$228,028	17.3	4
HUE CITY	CG66	LANT	$219,431	16.7	4
SHILOH	CG67	PAC	$218,019	15.8	4
LAKE ERIE	CG70	PAC	$195,191	14.9	4
VICKSBURG	CG69	LANT	$194,368	15.4	4
PHILIPPINE SEA	CG58	LANT	$194,339	19.1	2
NORMANDY	CG60	LANT	$165,300	18.3	3
GETTYSBURG	CG64	LANT	$148,451	16.8	3
ANZIO	CG68	LANT	$148,135	16.0	4
MONTEREY	CG61	LANT	$114,639	17.9	3
ANTIETAM	CG54	PAC	$114,246	20.8	2
CAPE ST GEORGE	CG71	LANT	$111,049	14.8	4
PRINCETON	CG59	PAC	$104,263	19.2	3
BUNKER HILL	CG52	PAC	$94,291	21.6	2
CHANCELLORSVILLE	CG62	PAC	$94,064	18.5	3
SAN JACINTO	CG56	LANT	$75,622	20.3	2
LAKE CHAMPLAIN	CG57	PAC	$58,915	19.7	2
MOBILE BAY	CG53	PAC	$52,338	21.2	2
LEYTE GULF	CG55	LANT	$43,050	20.5	2
VELLA GULF	CG72	LANT	$35,006	14.6	4

Table 78. CG Travel of Personnel Expenditures for FY 2007.

SHIP NAME	HULL #	FLEET	EXP	AGE	BASELINE
BUNKER HILL	CG52	PAC	$31,537	21.6	2
PRINCETON	CG59	PAC	$28,862	19.2	3
CHANCELLORSVILLE	CG62	PAC	$27,047	18.5	3
CHOSIN	CG65	PAC	$22,592	17.3	4
COWPENS	CG63	PAC	$21,369	17.3	3
ANTIETAM	CG54	PAC	$20,449	20.8	2
PORT ROYAL	CG73	PAC	$17,596	13.8	4
LAKE CHAMPLAIN	CG57	PAC	$16,975	19.7	2
MOBILE BAY	CG53	PAC	$16,521	21.2	2
LAKE ERIE	CG70	PAC	$15,733	14.9	4
SHILOH	CG67	PAC	$15,343	15.8	4
NORMANDY	CG60	LANT	$14,358	18.3	3
VICKSBURG	CG69	LANT	$9,109	15.4	4
ANZIO	CG68	LANT	$5,760	16.0	4
PHILIPPINE SEA	CG58	LANT	$3,647	19.1	2
MONTEREY	CG61	LANT	$3,356	17.9	3
HUE CITY	CG66	LANT	$1,901	16.7	4
CAPE ST GEORGE	CG71	LANT	$1,670	14.8	4
GETTYSBURG	CG64	LANT	$994	16.8	3
LEYTE GULF	CG55	LANT	$419	20.5	2
SAN JACINTO	CG56	LANT	$100	20.3	2
VELLA GULF	CG72	LANT	$0	14.6	4

Table 79. CG Communications Expenditures for FY 2007.

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
GETTYSBURG	CG64	LANT	$750,555	16.8	3
VELLA GULF	CG72	LANT	$480,784	14.6	4
PHILIPPINE SEA	CG58	LANT	$153,248	19.1	2
SHILOH	CG67	PAC	$152,703	15.8	4
ANTIETAM	CG54	PAC	$147,469	20.8	2
ANZIO	CG68	LANT	$129,724	16.0	4
HUE CITY	CG66	LANT	$125,744	16.7	4
CHANCELLORSVILLE	CG62	PAC	$119,246	18.5	3
MONTEREY	CG61	LANT	$117,765	17.9	3
NORMANDY	CG60	LANT	$108,396	18.3	3
PORT ROYAL	CG73	PAC	$95,010	13.8	4
CAPE ST GEORGE	CG71	LANT	$89,961	14.8	4
LEYTE GULF	CG55	LANT	$77,436	20.5	2
CHOSIN	CG65	PAC	$65,263	17.3	4
SAN JACINTO	CG56	LANT	$58,479	20.3	2
COWPENS	CG63	PAC	$54,398	17.3	3
VICKSBURG	CG69	LANT	$42,658	15.4	4
LAKE CHAMPLAIN	CG57	PAC	$34,317	19.7	2
BUNKER HILL	CG52	PAC	$29,537	21.6	2
MOBILE BAY	CG53	PAC	$19,182	21.2	2
PRINCETON	CG59	PAC	$16,293	19.2	3
LAKE ERIE	CG70	PAC	$7,346	14.9	4

Table 80. CG Services Expenditures for FY 2007.

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
PRINCETON	CG59	PAC	$4,046,327	19.2	3
CHANCELLORSVILLE	CG62	PAC	$4,046,327	18.5	3
CHOSIN	CG65	PAC	$4,046,328	17.3	4
NORMANDY	CG60	LANT	$4,046,327	18.3	3
PORT ROYAL	CG73	PAC	$4,046,328	13.8	4
SHILOH	CG67	PAC	$4,046,328	15.8	4
LAKE ERIE	CG70	PAC	$4,046,328	14.9	4
ANTIETAM	CG54	PAC	$4,046,326	20.8	2
BUNKER HILL	CG52	PAC	$4,046,326	21.6	2
LAKE CHAMPLAIN	CG57	PAC	$4,046,326	19.7	2
MOBILE BAY	CG53	PAC	$4,046,326	21.2	2
VICKSBURG	CG69	LANT	$4,046,328	15.4	4
ANZIO	CG68	LANT	$4,046,328	16.0	4
COWPENS	CG63	PAC	$4,046,327	17.3	3
PHILIPPINE SEA	CG58	LANT	$4,046,326	19.1	2
SAN JACINTO	CG56	LANT	$4,046,326	20.3	2
HUE CITY	CG66	LANT	$4,046,328	16.7	4
LEYTE GULF	CG55	LANT	$4,046,326	20.5	2
CAPE ST GEORGE	CG71	LANT	$4,046,328	14.8	4
MONTEREY	CG61	LANT	$4,046,327	17.9	3
VELLA GULF	CG72	LANT	$4,046,328	14.6	4
GETTYSBURG	CG64	LANT	$4,046,327	16.8	3

Table 81. CG Supply Expenditures for FY 2007.

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
GETTYSBURG	CG64	LANT	$42,588	16.8	3
MONTEREY	CG61	LANT	$32,253	17.9	3
VICKSBURG	CG69	LANT	$32,041	15.4	4
PORT ROYAL	CG73	PAC	$29,271	13.8	4
CAPE ST GEORGE	CG71	LANT	$27,105	14.8	4
ANZIO	CG68	LANT	$24,026	16.0	4
SAN JACINTO	CG56	LANT	$19,011	20.3	2
LAKE CHAMPLAIN	CG57	PAC	$9,492	19.7	2
HUE CITY	CG66	LANT	$7,392	16.7	4
NORMANDY	CG60	LANT	$6,456	18.3	3
COWPENS	CG63	PAC	$5,083	17.3	3
BUNKER HILL	CG52	PAC	$4,440	21.6	2
PRINCETON	CG59	PAC	$4,338	19.2	3
PHILIPPINE SEA	CG58	LANT	$3,459	19.1	2
ANTIETAM	CG54	PAC	$2,891	20.8	2
CHANCELLORSVILLE	CG62	PAC	$2,551	18.5	3
LAKE ERIE	CG70	PAC	$2,489	14.9	4
MOBILE BAY	CG53	PAC	$1,822	21.2	2
CHOSIN	CG65	PAC	$1,077	17.3	4
LEYTE GULF	CG55	LANT	$675	20.5	2
SHILOH	CG67	PAC	$561	15.8	4
VELLA GULF	CG72	LANT	$0	14.6	4

Table 82. CG POL-Other Expenditures for FY 2007.

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
VICKSBURG	CG69	LANT	$287,187	15.4	4
VELLA GULF	CG72	LANT	$266,789	14.6	4
PRINCETON	CG59	PAC	$176,976	19.2	3
CHANCELLORSVILLE	CG62	PAC	$148,877	18.5	3
LAKE ERIE	CG70	PAC	$144,181	14.9	4
MONTEREY	CG61	LANT	$138,787	17.9	3
HUE CITY	CG66	LANT	$136,165	16.7	4
LAKE CHAMPLAIN	CG57	PAC	$135,618	19.7	2
CHOSIN	CG65	PAC	$114,473	17.3	4
ANTIETAM	CG54	PAC	$113,985	20.8	2
NORMANDY	CG60	LANT	$109,807	18.3	3
MOBILE BAY	CG53	PAC	$91,420	21.2	2
SAN JACINTO	CG56	LANT	$86,996	20.3	2
COWPENS	CG63	PAC	$84,287	17.3	3
BUNKER HILL	CG52	PAC	$72,427	21.6	2
PHILIPPINE SEA	CG58	LANT	$64,794	19.1	2
GETTYSBURG	CG64	LANT	$53,401	16.8	3
CAPE ST GEORGE	CG71	LANT	$52,660	14.8	4
SHILOH	CG67	PAC	$50,311	15.8	4
PORT ROYAL	CG73	PAC	$46,038	13.8	4
ANZIO	CG68	LANT	$40,162	16.0	4
LEYTE GULF	CG55	LANT	$23,218	20.5	2

Table 83. CG Equipment Expenditures for FY 2007.

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
SHILOH	CG67	PAC	$24,565	15.8	4
COWPENS	CG63	PAC	$19,824	17.3	3
CHOSIN	CG65	PAC	$14,491	17.3	4
PORT ROYAL	CG73	PAC	$13,500	13.8	4
NORMANDY	CG60	LANT	$9,440	18.3	3
PHILIPPINE SEA	CG58	LANT	$7,122	19.1	2
MONTEREY	CG61	LANT	$5,490	17.9	3
LAKE ERIE	CG70	PAC	$4,000	14.9	4
ANTIETAM	CG54	PAC	$3,505	20.8	2
CAPE ST GEORGE	CG71	LANT	$70	14.8	4
ANZIO	CG68	LANT	$0	16.0	4
BUNKER HILL	CG52	PAC	$0	21.6	2
CHANCELLORSVILLE	CG62	PAC	$0	18.5	3
GETTYSBURG	CG64	LANT	$0	16.8	3
HUE CITY	CG66	LANT	$0	16.7	4
LAKE CHAMPLAIN	CG57	PAC	$0	19.7	2
LEYTE GULF	CG55	LANT	$0	20.5	2
MOBILE BAY	CG53	PAC	$0	21.2	2
PRINCETON	CG59	PAC	$0	19.2	3
SAN JACINTO	CG56	LANT	$0	20.3	2
VELLA GULF	CG72	LANT	$0	14.6	4
VICKSBURG	CG69	LANT	$0	15.4	4

Table 84. CG Printing and Reproduction Expenditures for FY 2007.

SHIP NAME	HULL #	FLEET	EXPENDITURES	AGE	BASELINE
SAN JACINTO	CG56	LANT	$86,234	20.3	2
LEYTE GULF	CG55	LANT	$21,472	20.5	2
CAPE ST GEORGE	CG71	LANT	$18,779	14.8	4
LAKE ERIE	CG70	PAC	$18,122	14.9	4
LAKE CHAMPLAIN	CG57	PAC	$15,445	19.7	2
COWPENS	CG63	PAC	$13,410	17.3	3
NORMANDY	CG60	LANT	$12,147	18.3	3
VICKSBURG	CG69	LANT	$12,008	15.4	4
PORT ROYAL	CG73	PAC	$11,916	13.8	4
GETTYSBURG	CG64	LANT	$11,180	16.8	3
ANTIETAM	CG54	PAC	$10,808	20.8	2
PRINCETON	CG59	PAC	$9,974	19.2	3
CHOSIN	CG65	PAC	$7,954	17.3	4
MONTEREY	CG61	LANT	$7,714	17.9	3
HUE CITY	CG66	LANT	$7,369	16.7	4
CHANCELLORSVILLE	CG62	PAC	$6,588	18.5	3
PHILIPPINE SEA	CG58	LANT	$5,938	19.1	2
VELLA GULF	CG72	LANT	$3,891	14.6	4
SHILOH	CG67	PAC	$2,461	15.8	4
ANZIO	CG68	LANT	$1,826	16.0	4
BUNKER HILL	CG52	PAC	$800	21.6	2
MOBILE BAY	CG53	PAC	$278	21.2	2

Table 85. CG Repair-AVDLR Expenditures for FY 2007.

LIST OF REFERENCES

Anderson, Helene B., and Daniel W. Miles. "'Virtual Maintenance' Promises Big Savings." *National Defense* 88, no. 604 (March 2004): 21.

Bender, Bryan. JDW Bureau Chief Washington, DC. "US Navy to Move Towards Commonality in Radars." *Jane's Defense Weekly* 31, no. 23 (June 9, 1999): 1.

Bost, J. Robert, Scott C. Truver, and Olaf Knutson. "Minimal Manning is Not Optimal Manning!" *Naval Forces* 28, no. 4 (2007): 78.

Brown, Gerald G., Clark E. Goodman, and R. Kevin Wood. "Annual Scheduling of Atlantic Fleet Naval Combatants." *Operations Research* 38, no. 2 (March/April 1990): 249.

Burgess, Richard R. "CNO Launches Reorganization to Standardize Fleet Training." *Sea Power* 44, no. 10 (October 2001): 29.

Carl, Brauna. "CNO Announces Plans to Align the Fleet." *All Hands*, no. 1016 (December 2001): 13.

Catalano, James Anthony, and Shu S. Liao. 1988. “Toward an OPTAR Allocation Model for Surface Ships of the Pacific Fleet.” Master’s thesis, Naval Postgraduate School, Monterey, CA.

"CNO Stresses Innovation, Partnership with Industry." *Defense Daily International* 3, no. 2 (November 9, 2001): 1.

Cook, Ron, and Robert Warner. *Task Force Readiness: Ship Ops Model WG*2007.

"Defense Watch." *Defense Daily* 234, no. 35 (May 21, 2007).

Edlin, Cynthia Rae. 2005. "Automated Forecasting of Replacement Part Requisitions." Master’s thesis, University of Louisville.

Erwin, Sandra I. "Future Fleet." *National Defense* 92, no. 645 (August 2007): 48.

———. "Navy 'Fleet Response' Posture could Strain Shipyards, Crews." *National Defense* 88, no. 597 (August 2003): 50.

Etnyre, T. T. "Commander, Naval Surface Forces Strategic Plan 2006-2011." (2007). http://www.swe.surfor.navy.mil/Site%20Pages/StrategicPlan.aspx (accessed February 28, 2008).

"Exchange Rates." http://www.x-rates.com/ (accessed May 2, 2008).

"Experts See Smaller Budget Share for the Navy and A Smaller Fleet." *Defense Daily* 223, no. 70 (October 8, 2004): 1.

Fullerton, Jeff, Marc Scotchlas, Thad Smith, and Adam S. Freedner. “Operational Impacts of the Aegis Cruiser Smartship System.” Conference paper, NAVAL SEA SYSTEMS COMMAND WASHINGTON DC, March 2004.

Gantt, William K., Mihaly Gyarmati, Hajdu Zsolt, Andrew M. Hascall, and Andrew M. Matthews. 2003. “Analysis of the Ship Ops Model's Accuracy in Predicting U. S. Naval Ship Operating Cost.” Master’s thesis, Naval Postgraduate School, Monterey, CA.

Jane's Information Group. "Jane's Fighting Ships." http://www.janes.com/Search/documentView.do?docId=/content1/janesdata/yb/jfs/jfs_3530.htm@current&pageSelected=allJanes&keyword=tank&backPath=http://search.janes.com/Search&Prod_Name=JFS&keyword= (accessed April 15, 2008).

Jean, Grace. "Battling from the Pier." *National Defense* 91, no. 634 (September 2006): 24.

Jensen, Milinda D. "SHIPMAIN and Sea Power 21: Transforming the U.S. Navy." *Sea Technology* 45, no. 11 (November 2004): 41.

Keeter, Hunter C. "Operational Units Gain Stronger Voice in Decisions about Weapons, Training." *Sea Power* 47, no. 2 (February 2004): 27.

Kuker, Kevin L., Shu S. Liao, and Craig D. Hanson. 1988. "A Feasibility Study of Relating Surface Ship OPTAR Obligation Patterns to their Operating Schedules." Master’s thesis, Naval Postgraduate School, Monterey, CA.

LaFleur, Timothy W., and Phillip M. Balisle. "SHIPMAIN - Reengineering for a Culture of Readiness." *Sea Power* 46, no. 9 (September 2003): 30.

Lundquist, Edward H. "Commentary - Navy to Modernize Aging Aegis Cruisers." *National Defense* 88, no. 597 (2003): 56.

Merle, Renaem and Jonathan Weisman. "Pentagon Scales Back Arms Plans; Current Needs Outweigh Advances in Technology." *The Washington Post,* January 5, 2005.

———. "Pentagon Scales Back Arms Plans; Current Needs Outweigh Advances in Technology." *The Washington Post,* January 5, 2005.

Knickerbocker, Brad. "Military Readiness Vs. the Environment; Environmental Groups and Local Communities Want Bases to Conform to Environmental Standards, such as the Clean Water Act." *Christian Science Monitor*, October 4, 2001.

Moore, Howard E. 1991. "Commander, U.S. Naval Surface Forces, Pacific Budget Process." Master's thesis, Naval Postgraduate School, Monterey, CA.

Munson, W. S. "NAVSUP P485, Appendix 30 Fund Codes." In . Vol. 2, A30-31, 1997.

"Navy Alignment to Foster Tension among Requirements, Resources." *Defense Daily* 207, no. 63 (September 29, 2000): 1.

"Navy's Fleet Maintenance Board Tasked with Maintaining Readiness." *Defense Daily* 228, no. 18 (October 28, 2005): 1.

"New Navigation System Will Save Navy Money, Time and Paper." *Defense Daily* 227, no. 19 (July 28, 2005): 1.

O'Neal, Michael A., and William O. Davis. "The Fleet Needs Integrated Systems and Training." *United States Naval Institute. Proceedings* 127, no. 4 (April 2001): 89.

Pennypacker, Blaine S. 1994. "A Comparison and Validation of Two Surface Ship Readiness Models." Master's thesis, Naval Postgraduate School, Monterey, CA.

Peterson, Gordon I. "A 'Fleet Voice' for Readiness Requirements." *Sea Power* 44, no. 5 (May 2001): 11.

Potvin, Lisa. "Chapter 2: From Congress to You." In *Practical Financial Management: A Handbook for the Defense Department Financial Manager* 7th ed., edited by Lisa Potvin. Monterey, CA: United States Naval Postgraduate School Graduate School of Business and Public Policy, November 2007.

Yardley, Roland J., Raj Raman, Jessie Riposo, James Chiesa, and John F. Schank. *Impacts of the Fleet Response Plan on Surface Combatant Maintenance*. RAND Corporation, Santa Monica, CA, 2006. http://www.rand.org/pubs/technical_reports/2006/RAND_TR358.pdf (accessed July 12, 2006).

Reed, James E. 2002. "Budget Preparation, Execution and Methods at the Major Claimant/Budget Submitting Office Level." Masters thesis, Naval Postgraduate School, Monterey, CA.

Roth, Margaret. "Ship System Innovations Will have Lasting Impact on Navy's Future." *Sea Power* 47, no. 10 (October 2004): 18.

Rysavy, Joseph C. 2007. "A Statistical Analysis of Los Angeles Class OPTAR Expenditures between Pacific Fleet Homeports." Masters thesis, Naval Postgraduate School, Monterey, CA.

"Ships Recognized for SHIPMAIN Excellence." *Sea Technology* 46, no. 4 (Aprill 2005): 64.

"Shiptrain Changes Bring Benefits to Fleet Sailors." *US Federal News Service, Including US State News* (March 17, 2006).

U. S. Congressional Budget Office. *Transforming the Navy's Surface Combatant Force.* Washington, D.C.: Congress of the U.S., Congressional Budget Office: U.S. G.P.O. [distributor], 2003.

U.S. Department of Labor. "Bureau of Labor Statistics Data." http://data.bls.gov/PDQ/servlet/SurveyOutputServlet (accessed May 2, 2008).

U. S. Government Accountability Office (GAO). *Military Readiness: Navy's Fleet Response Plan would Benefit from a Comprehensive Management Approach and Rigorous Testing* (GAO-06-84, November 2005, Report to Congressional Committees).

U. S. Navy. *Department of the Navy Fiscal Year 2007 Budget Estimates Submission Operation and Maintenance*, 1-4.

U. S. Navy. Office of the Comptroller. *Financial Management of Resources: Operating Procedures (Operating Forces).* [Washington, D.C.]; Philadelphia, PA: Dept. of the Navy, Office of the Comptroller; Naval Publications and Forms Center [distributor], 1990.

"U.S. Navy Requests $79b to Maintain Operations." *Jane's Defense Weekly* (February 12, 1997): 8.

"United States Navy Organization and Missions." *Sea Power* 50, no. 1 (Jan, 2007): 1. http://proquest.umi.com/pqdweb?did=1234487851&Fmt=7&clientId=65345&RQT=309&VName=PQD (accessed February 28, 2008).

Vego, Milan. "Littoral Warfare: Capabilities and Assets Required." *Naval Forces* 27, no. 5 (2006): 20.

Williams, Thomas D., IV. 1987. “An Analysis of Selected Surface Ship OPTAR Obligation Patterns and their Dependency on Operating Schedules and Other Factors.” Master’s thesis, Naval Postgraduate School, Monterey, CA.

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